Proceedings
of the Seminar
on .....

PROTECTION OF GROUNDWATER FROM TOXIC AND HAZARDOUS MATERIALS

AREAWIDE
WASTE TREATMENT
208
MANAGEMENT

November 17, 1980

Long Island Regional Planning Board

Seminar on the Protection of Groundwater From Toxic and Hazardous Materials November 17, 1980

Long Island Regional Planning Board

Held at the Suffolk Academy of Medicine
850 Veterans Memorial Highway, Hauppauge, New York

Foreword

The Seminar on the Protection of Groundwater from Toxic and Hazardous Materials took place under the auspices of the Long Island 208 Plan Implementation Program. This program is funded by the United States Environmental Protection Agency for the purpose of helping to carry out the recommendations of the Long Island 208 Areawide Waste Treatment Management Plan, July 1978.

Among a number of other tasks named in the program, the Long Island Regional Planning Board is required to run a series of workshops and seminars on topics related to Areawide Waste Treatment Management. The first in the series, "208/201 Workshop" was held on March 31, 1980, and was attended by public officials and engineering consultants interested in the interrelationships between 208 Areawide Planning and 201 Facility Planning. No proceedings were issued.

The present seminar has importance for a much wider audience, including industry and the public. Consequently, it was felt to be necessary to publish these proceedings.

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Opening Remarks

DR. EDITH TANENBAUM
Long Island Regional Planning Board

I wish to welcome you to the second in a series of technical seminars sponsored by the Long Island Regional Planning Board, and the 208 Technical Advisory Committee.

I am delighted to see that so many of you share our concern for the protection of the groundwater from the effects of toxic and hazardous materials.

As many of you know, the 208 Areawide Waste Management Plan of 1978 for Long Island called attention to the problem and called for the regulation of the storage, transport, and disposal of such materials. We have already seen some progress, particularly on the local level; and, if all goes as planned, Wednesday, November 19, 1980 should usher in a new era in the handling of toxic and hazardous materials.

Our program this morning will include a brief summary of the problems here on Long Island, followed by a discussion of Federal and State activities. After lunch, we shall hear from Nassau and Suffolk Counties and from representatives of the handlers and processors of toxic and hazardous substances. We will close with a panel discussion of the overlaps and duplications in the regulatory process, the gaps or omissions and, hopefully, with some recommendations for improvement.

At this time, I should like to introduce Dr. Israel Wilenitz of our staff. He will act as alternate Chairperson and timekeeper. Since our schedule is extremely tight, Dr. Wilenitz and I have decided to omit the usual, somewhat lengthy introductions. I hope that our speakers, who are, indeed, expert in their respective fields, will not feel slighted.

Long Island's Problems: Nassau County

M. FLEISHER

Nassau County Deartment of Health (NCDH)

Abstract

Nassau County's concern with toxic and hazardous waste problems is related to Long Island's sole source aquifer and public water supply systems. The underlying cause of recently discovered problems and costly cleanup efforts is our past ignorance of the toxicity and environmental side effects of chemicals and waste materials. In general, the more we learn, the more we will find in the groundwater. Many materials now discovered to be toxic were unregulated and in common use in past years. Many environmentally harmful chemicals are still in common usage in homes and are still disposed of improperly. The recently passed State and Suffolk County Cesspool Cleaner Bans represent an important step towards control of toxic discharges to groundwaters, but there are many other consumer products we are interested in controlling. Two fiscal year 1981 research projects, to be conducted by NYSDEC, will address these problems. The projects consist of a study of consumer products in groundwater and the preparation of an emergency response and control plan to deal with storage tank leaks and accidental spills or discharges of hazardous materials. Nassau and Suffolk's problems are essentially the same. The major question that remains unanswered is who will pay for cleaning up the environment—the consumer who drinks the water; the generator who faces more and more regulations and costs as public awareness grows; or governments who failed to regulate past disposal practices properly? The one thing we do know is that cleaning up after ourselves will be very, very expensive.

Basically the problems that Nassau County has are specific to Nassau County because we have both a sole source aquifer and public water supply systems. As you all know, I am sure, our only source of water is from the ground and not from reservoirs, lakes or rivers, as other people have. Anything that spills on the ground is eventually going to wind up in the drinking water, with rare exceptions, of course.

The problems we have are caused by a lack of understanding, in the past, of the toxicity of chemicals and their side effects, and the deleterious effects of chemicals on the environment. Many of the cleanup programs we have were undertaken because of actions by companies, doing things that they didn't understand. There were no government regulations against certain of these actions, no understanding of enforcement of any sort, or guidelines.

Many of the substances that we believe today to be toxic, even some of the expected carcinogens, were everyday consumer or medical products in past years. One of these products (1,1, 1-trichloroethane), formerly used as an anesthetic, is a very dangerous substance in drinking water. Any water containing more than 50 parts per billion may not be drunk. Of course, people working in hospitals disposed of it every day. There are many other chemicals that we used every day in the home. Some of them are still being used. People are disposing of them constantly, often by methods that are not proper environmentally.

A lot of our problem is because of a lack of understanding of the toxicity of the products, and we are finding out more about these as we go on. In fact, where there is no regulation, people say, "We always threw it out in the back yard before. Why not continue to do so." If it didn't have enought value to warrant salvaging, it was dumped. Now we are encountering very serious problems because there are many areas with very highly contaminated soils. Every time it rains, materials on the ground are washed into the groundwater aquifer, and eventually get into the drinking water.

There are many other problems due to the type of products that are used in the home. Nassau and Suffolk Counties, together with the State Attorney General's Office, finally had a law passed by New York State banning the use of certain consumer products. There are many other consumer products that we are interested in controlling, and we will be getting funding for Nassau and Suffolk Counties, in association with the Long Island Regional Planning Board, to carry out a program to investigate other consumer products. Using the results of this program, we will try to alert the public to what consumer products they should be more cautious of using. In particular, we expect that there will be legislation against some of the sprays that are being sold today that have methylene chloride as a propellent. If you are standing in the bathroom spraying your hair, you are breathing in a chemical which is dangerous. This study will be starting in 1981.

Another study will be initiated on trying to determine methods of controlling the leakage from underground storage tanks. In particular, we have a very serious problem in both counties with the leaking of gasoline tanks. Many of you, at least those from Nassau, have known of the major spill in East Meadow. There is now a major spill in Cedarhurst, and nearly every time we investigate an old,

established gas station we find trouble. Local ordinances on storage tanks have been passed in Suffolk County. The Health Department in Nassau County is very much in accord with the control of fuel and chemical storage tanks, and there is legislative action in Albany to try to make it a statewide regulation.

The third problem with groundwater is chemical spills. These are by industries which, either through carelessness or through a lack of understanding of the environmental impacts of certain substances, allowed them to spill without attempting to clean them up. Many people in the solvent selling and recovery business would transfer chemicals from one drum to another and then shake the empty drum out on the ground because it was the easiest place to put the drippings. This has resulted in highly contaminated soils.

This afternoon, I'll get into what the County is doing in trying to correct these problems and enforcing regulations. However, one of the problems that comes up with enforcement is the lack of legislation, and, in many cases, the lack of a sufficient number of secure landfills or disposal sites, or chemical destruction equipment for getting rid of these chemicals. This has to be a Catch 22. We tell generators they have to be permitted and have their wastes taken away by a licensed scavenger to a legal disposal site, but there are very few legal disposal sites; and, of course, as the cost of transportation and disposal goes up, it is getting more expensive to get rid of them that way.

A great deal of attention is paid to controlling generators of toxic and hazardous wastes. Most of the Federal legislation considers that the top ten percent of the generators produce 90% of the waste. This is probably correct for the largest companies, like DuPont, but we don't have anybody of that magnitude on Long Island. We have many, many small generators, and when you consider that we are talking about contamination in the parts per billion level, you don't have to spill very many gallons from each of several hundred small sources to create a very serious groundwater contamination problem.

That's basically the problems that we are faced with in Nassau County. Mr. Costa will go into some of them more specifically, including some of the problems that face Suffolk County. Basically, Suffolk County problems are the same as Nassau County problems except that, in Suffolk, they have many small wells for water supply, whereas Nassau County has fewer wells, connected to municipal water supply systems. Anything you put into the ground will get into the aquifer, and when it gets into the aquifer, you are going to be drinking it.

The question is should the consumer pay for removing what some of the contaminators, knowingly or unknowingly, have spilled? Needless to say, none of us want to drink it, but who is going to get it out, and pay for the technology to get it out?

Long Island's Problems: Suffolk County

STEVE COSTA
Suffolk County Department of Health Services (SCDHS)

Abstract

Suffolk County uses one million pounds of carcinogenic pesticides and aromatic compounds each year. They are used as fuels (gasoline and oil), paint strippers, industrial solvents, degreasers, cleaners, and plating chemicals. Electroplating is a significant industry in the County. This presentation concerns the various routes by which toxic and hazardous wastes reach the groundwater. In general, methods of discharge can be separated into four categories: permanent discharges (which the State and SCDHS are trying to regulate through the SPDES program), unintentional and intentional illegal discharges, and discharges by small unregulated industries. Given the subtlety and complexity of the many avenues through which toxics reach groundwater, regulation and enforcement become very difficult. Adding to the difficulty are a number of serious problems. Governmental budgetary restraints have meant critical manpower shortages. There is an urgent need for adequate laboratory capability to support the enforcement effort. The SCDHS lab spends most of its time sampling drinking water supplies. There is never enough capacity for efficient sampling of industrial wastes. The State's Environmental Conservation laws are vague with respect to toxic materials. The rigid liability requirements render the statutes weak in court cases, since it is extremely difficult to prove direct responsibility. In addition to manpower and increased laboratory capability, licensing of private laboratories in the County is needed. Private laboratories range in quality from excellent to very poor. Poor facilities do a disservice to industry and simply add to regulatory problems. There is a need for increased data processing capability. At present, SCDHS cannot effectively handle the amounts of data collected. Finally, it will eventually be necessary to control the type of industries that locate in Suffolk County. Since it is apparent that regulatory efforts will not keep pace with the problem and some discharge of toxics to groundwater is inevitable, what is needed is a form of regulatory zoning that will safeguard critical recharge areas. SCDHS' Article 6 is an important first step in this process.

What I would like to discuss is some of the routes by which toxic wastes reach the groundwater. I would like to start with some incidents we have had to investigate within the last six months.

We had a gasoline truck overturn on Nesconset Highway in Smithtown. The truck spilled several gallons of gasoline, which reached a stormwater collection system, and ultimately got into the recharge basins in the area, causing gasoline to be introduced into the groundwater.

We are currently involved in a cleanup of over five thousand gallons of toxic sludge, which, until the recent passage of Article 12, a local Suffolk County Law, was stored in a totally legal manner. The industry, itself, is performing the clean-up operation.

On another occasion, an industry found one of its sealed waste drums bulging and apparently ready to explode as a result of the pressure generated by the reaction of the chemicals inside it. Before we could respond, the police responded, took the drum out to a field, blew it open by gunfire and allowed the contents to leach into the ground.

We found a barn in Calverton filled, floor to ceiling, with toxic wastes. Many of the drums were leaking. Much of the leakage was flowing under the door, and onto the ground outside. People in the area were complaining that they were affected by fumes.

During a fire in an electroplating plant, quantities of toxic solutions were spilled, under the impact of the water from the fire hoses. Luckily, all the liquids were contained in a collection sump. However, the Fire Department pumped out the collection sump, and discharged the liquid into a recharge basin, from which it percolated into the ground.

Another spill involved five gallons of tetrachloroethylene, which was used to clean grease and oil from cables in a telephone company manhole. Upon finishing the clean-up, the solvent in the manhole was flushed into a local pond, which had to be closed for at least five days while the pond cleaned itself of the tetrachloroethylene.

Obviously, these things don't happen every day, but they happen more and more frequently. We have to deal with such situations at least once a week, and it does touch on some of the more uncommon ways that toxics get into the ground.

In general, you can separate the methods of disposal into four categories. One is permanent discharges, and I won't go any further except to say that we are doing our best to regulate them. The other categories are: intentionally illegal discharges; illegal discharges that are not really intentional; and discharges by unregulated industries, or industries that previously were not regulated because they were very minor in nature.

In Suffolk County, we use approximately one million pounds of carcinogenic pesticides and aromatic compounds every year. These materials are used in a wide variety of ways, but you can break them down into fuels (such as gasoline or oils) and chemicals (such as strippers, solvents, photochemicals, and plating chemicals). Plating is a very large industry in Suffolk County.

I have outlined about seven or eight different types of disposal methods which we would consider intentionally illicit. Recently, we found an old asphalt plant which had several hundred drums of material in a field and another one where we found several large glass bottles of concentrated nitric acid sitting in an alley where children were playing.

We have a lot of problems with solvents in landfills. There have been some famous cases recently, one with regard to the disposal of solvents in the Islip landfill comes to mind immediately. A company or local disposer, who was not licensed to handle solvents, placed them in the dump, supposedly unknowingly. However, proof in these cases is almost impossible after all the material is buried, and no one actually saw him put the solvents there. So, it becomes a problem of enforcement.

We have encountered discharges onto roads. One of my more dedicated inspectors recently climbed a tree for three nights in a row trying to catch an illicit disposer emptying materials along a road in Southampton. In deference to the legal waste haulers, if there are any in the audience, I am not talking about them.

We have encountered burial on private property. We have dug up drums occasionally in areas where there was supposed to be no discharge or no usage of toxic chemicals, and we are investigating another area in Calverton right now where there is evidence that some drums are buried. Some people get rid of their waste by blending it into waste oil, which is then hauled away.

One of the biggest problems we have in enforcement is hidden pipes. We have industries that place pipes into catch basins: others that run pipes from industrial processes into sanitary leaching pools, or into storm drains; and still others that pipe their wastes into roof drains.

In Suffolk County, traditionally, many of these disposal points, such as leaching pools, are below ground and inaccessible, and unless you can prove by some other means that a company is discharging, it is very difficult to have someone dig up these pools just to prove that wastes are being dumped.

A lot of wastes are dumped into collection systems. The Southwest Sewer District has found quantities of toxic wastes in sewers, which were supposed to be dry. Factories have been simply abandoned. Two such factories, in the Town of Babylon, were recently found to have left a yard full of ketones and resins. Ultimately, the landlord of the property was charged with the expense of getting rid of all these materials.

We have an abandoned fish factory in Montauk on property now owned by the State. The State is in the process of cleaning up fuel tanks that were left on the property when the fish factory went out of business.

Next, I would like to talk about some unintentional ways of discharging. Most of these methods will be covered under the Suffolk County Sanitary Code, Article 12. One of these is leakage from tanks. There has been approximately one to two million gallons of gasoline spilled in the region in the past two years. That figure may be conservative. It is difficult to tell. Some of it has been recovered, but a lot of it does not get recovered, and remains in the ground. Inspectors, on a daily basis, seem to find more and more leaking gasoline stations. We have problems with overfills. Many buried tanks in the County are filled by gravity, and some of the truck drivers determine that they are full by watching them overflow. That is one of the reasons why the law specifically states that overfill protection had to be installed on these tanks.

Some companies that have had fires, accidents and spills are not indicated as existing on any official record. In Smithtown, a company that mixed paints burned down recently. Yet, the company's existence was not recorded by the Town, the Fire Department or the County. That's another problem we have—uncontrolled storage. In the County, there are hundreds of warehouses storing flammable liquids. Each one of them has a floor drain to a leaching pool. In fact, most prior codes *required* that they have a floor drain into a leaching pool if possible. In examining the leaching pools, we always find that they are contaminated. This is another area in which we have tried to work with the Fire Departments in order to come up with solutions that will not violate Fire Codes, and yet protect the groundwater from contamination.

There are many miles of pipelines in Suffolk County, and many miles of insulated cable. So far, these have not been a problem, but there is a great potential.

Under the category of unregulated or poorly regulated industries, there are sources such as small businesses run by homeowners. We have many garage businesses in Suffolk and Nassau Counties. We have people electroplating baby shoes, to name just one. We also have many people doing photo finishing. In fact, we came upon an interesting case a year ago. Of course, he wasn't causing any pollution. He just took all his waste and dumped it in his mother-in-law's toilet in Nassau County. We have rug shampooing operators dumping cleaning solutions. Some of these people use pretty strong solvents.

We have commercial establishments that were not previously regulated. The reason for this was that they had very, very small discharges; and, when regulatory agencies were dealing with conventional pollutants, small discharges did not have a great effect on the groundwater. However, in dealing with toxic organics with a greater impact, these discharges have to come under the regulatory eye. These companies include machine shops, fork-lift repair stations and dry cleaners, which cause a lot of problems with discharges of tetrachloroethylene. We also have paint strippers, furniture refinishers, and fence installers, who use large quantities of solvents.

Normally, one wouldn't think of fence installers as a cause of pollution, yet many of them creosote in their back yards and spill the excess.

We have many chemical suppliers located in Suffolk. A lot of materials, in this case, are stored outside. Occasionally, sloppiness causes leakage and spills which go into the nearby sumps. Mixing and handling operations are also significant. Doctor Zaki, later on, will talk about what we are going to do with these. I would now like to take a second and talk about some of the needs of the regulatory agency.

With budgetary restrictions, we never have enough people. However, in order to get good support, we do need laboratory capacity. Our laboratory in Suffolk County does a great deal of work, but most of their time is tied up

sampling water supplies, and rightly so. However, when it comes to industrial waste, which is the cause of the problems, there is never enough capacity. So, we do need more laboratory capacity. We also need private laboratory licensing. The quality of labs in the County runs from excellent to very poor. Some people, running around with little ten dollar test kits, are approaching industries and offering to test their waste. This sort of thing really does a disservice to industry, but since there is no control and no licensing when dealing with discharges, it becomes a regulatory problem and we are not now in a position to judge the capability of these laboratories.

The Environmental Conservation Law is not specific when it comes to toxic materials. The law is quite weak when you try to prove a case, especially a criminal case.

All told, we need manpower, equipment, laboratory capabilities and good data processing. The latter would be a great help, since we handle scads of data and don't have the people to look through it all and summarize it. So, data processing is important in analyzing more efficiently the day-to-day data we collect. Lastly, some regulatory zoning is definitely needed. Many spills are inadvertent and will always occur, no matter how much regulation there is. The chances are that one will cause less of a problem by applying regulatory zoning restrictions to certain types of industry, preventing them from locating in critical recharge areas.

How the U.S. Government Addresses These Problems: U.S. Environmental Protection Agency

RALPH LARSEN AND MARK PELLEY
U.S. Environmental Protection Agency (U.S.E.P.A.)

Abstract

Federal jurisdiction relates to the life cycle of a chemical through 15 pieces of legislation (see Figure 1), of which the two most important (for this Seminar's purposes) are the Resource Conservation and Recovery Act (RCRA) and the Toxic Substances Control Act (TSCA). Long Island's major problems seem to be hazardous material spill response, hazardous waste disposal, enforcement, and lack of laboratory capacity. EPA hopes that RCRA will solve or at least set in place the mechanisms to solve most of the Island's environmental problems. Enforcement under environmental regulations is complex and difficult. Agencies can act if an imminent hazard exists, but since there is a lack of data on long-term, chronic effects of chemicals in drinking water, it is difficult to prove imminent hazard in court. RCRA attempts to remedy this by dealing with the concept of endangerment of public health. It merely requires proof of potential harm, which is much less burdensome and is expected to lead to a significant increase in agency action.

I think the easiest way to describe all the relevant Federal regulatory authorities is to trace a chemical from the time it is manufactured, follow where it goes and see what authorities apply. Referring to Figure 1, you can see that, from the time it's manufactured, OSHA Regulations apply in the work place. What comes out of the stack in the plant is under the authority of the Clean Air Act. What comes out of the pipe into the river comes under the Clean Water Act and a few other acts.

The transportation comes under either the Hazardous Materials Transportation Act or under the Resource Conservation and Recovery Act. From there, a chemical usually goes to some processor who, again, can handle a lot of waste products coming under the authority of the Resource Conservation and Recovery Act, the Clean Water Act or even the Clean Air Act. He will take the chemical and formulate a product. It can either be an industrial product or a consumer product, and, at this point, it comes under the jurisdiction of some other agencies or acts, such as the Consumer Product Safety Commission, the Federal Hazardous Substances Act, the Poison Prevention and Packaging Act, or, as you can see at the top of the Figure, the Federal Insecticide, Fungicide and Rodenticide Act.

At the bottom, you will see "TSCA," the Toxic Substances Control Act, which was passed in 1976. Theoretically, that law can be used to regulate anything regarding chemical manufacturing, use, handling, labeling, and disposal. It is supposed to fill all the gaps not covered by other laws. TSCA is only to be used when another existing law cannot solve a problem. In other words, not every problem will be regulated by the Toxic Substances Control Act.

So far, under the Toxic Substances Control Act, the only two regulations issued concern PCB's and chlorofluorocarbons, and I believe there is an asbestos regulation now proposed. There is, also, the pre-manufacturing notification (PMN) process which is now in effect. Under Section 5 of the law, it says that if you intend to manufacture a new chemical, you must notify the EPA of that intent ninety days in advance. At that time, you have to submit environmental data and health data to show that the chemical will not be harmful to public health or to the environment. The final regulations are not yet in place, and, as a result, a lot of data has not been coming into the agency. I think that, this fiscal year, over three hundred PMN notices have already been received. Only a few have been rejected. Generally, the data that's missing is what we want, namely data on the long-term chronic effects of the chemical.

You have heard from the previous speakers that the major problems on Long Island involve emergency response to hazardous wastes spills; disposal of hazardous wastes, possibly pesticides; enforcement, and the need for laboratory capacity.

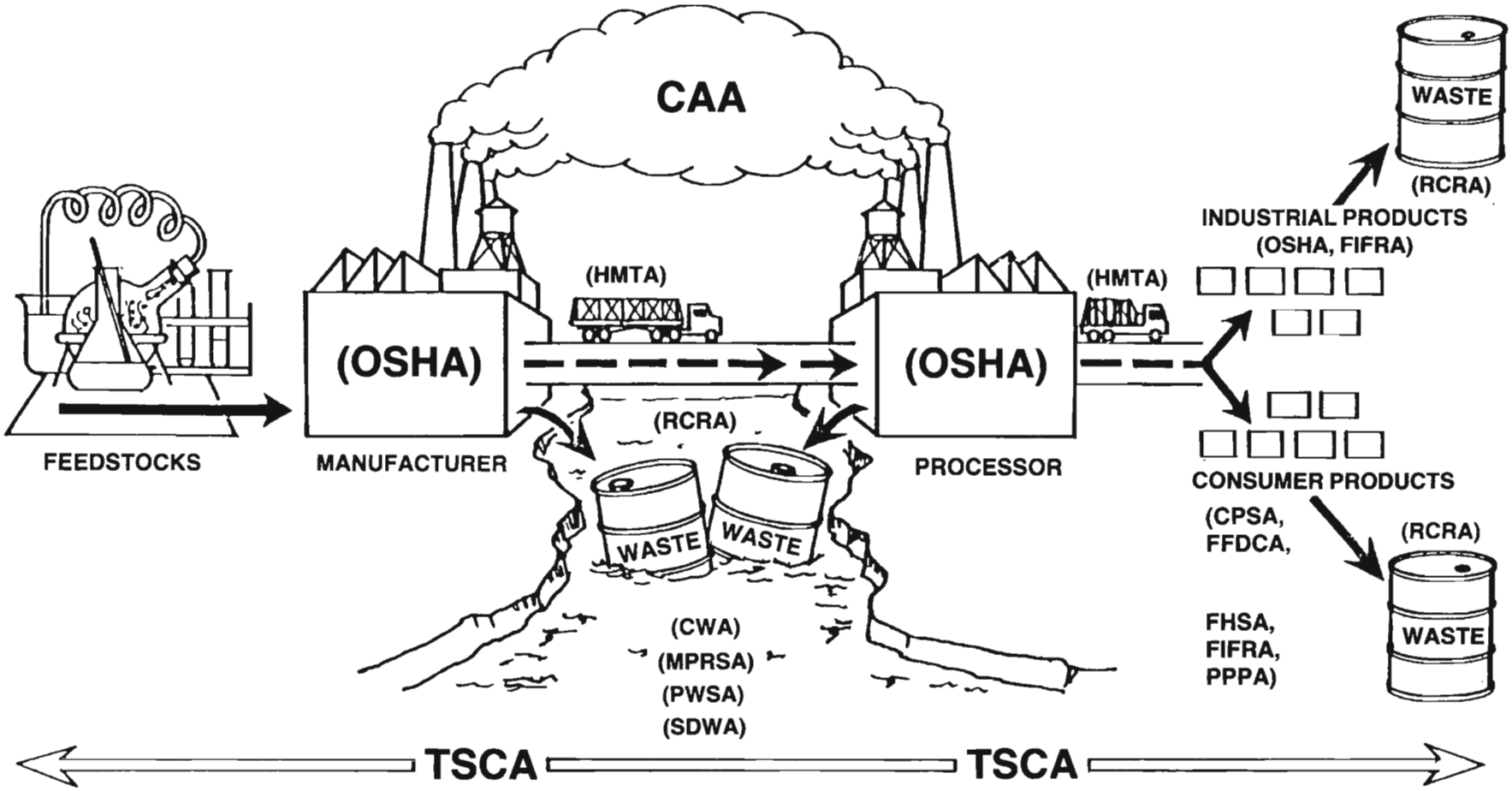
Certainly, we hope that the Resource Conservation and Recovery Act will solve or at least set in place the mechanism to solve most of the environmental problems on Long Island.

Enforcement under most of these authorities is very difficult unless there is a regulation in place that permits reference to a particular paragraph or section. All of the environmental authorities have an imminent hazard section which says that the agency can take certain steps if the substance presents an imminent hazard. However, to claim imminent hazard is one thing; to prove it is another. There is not much reliable data around concerning the long-term, low-level chronic effects of chemicals. It's very difficult to prove in court that a chemical in drinking water, for example, will pose some kind of risk.

In the Resource Conservation and Recovery Act, the wording has been changed and discusses endangerment, and anyone contributing to endangerment. Endangerment can be described by the example of a tornado threatening a town. While it remains outside of town, the town is said to be endangered. The tornado may never hit the town, but

FIGURE 1

LEGISLATIVE AUTHORITIES AFFECTING THE LIFE CYCLE OF A CHEMICAL



KEY

CAA	= CLEAN AIR ACT
CPSA	= CONSUMER PRODUCT SAFETY ACT
CWA	= CLEAN WATER ACT
FFDCA	= FED. FOOD, DRUG, & COSMETIC ACT
FHSA	= FED. HAZARDOUS SUBSTANCES ACT
FIFRA	= FED. INSECTICIDE, FUNGICIDE, & RODENTICIDE ACT
HMTA	= HAZARDOUS MATERIALS TRANSPORTATION ACT
MPRSA	= MARINE PROTECTION, RESEARCH & SANCTUARIES ACT
OSHA	= OCCUPATIONAL SAFETY & HEALTH ACT
PPPA	= POISON PREVENTION PACKAGING ACT
PWSA	= PORTS & WATERWAYS SAFETY ACT
RCRA	= RESOURCE CONSERVATION & RECOVERY ACT
SDWA	= SAFE DRINKING WATER ACT
TSCA	= TOXIC SUBSTANCES CONTROL ACT

still the town is endangered. Through this kind of reasoning, it is hoped that you will see more action on the part of at least the Federal agencies.

I did bring with me today Mark Pelley from the Hazardous Waste Section, who knows the details of the Resource Conservation and Recovery Act. We won't be able to stay until the panel discussion, so we thought we could take some questions now.

Floor: After November 19th, if a generator doesn't have an EPA number, what will happen to his waste?

Mr. Pelley: Well, the generator will have a problem in that instance, because he could generate waste, but he wouldn't be able to haul it off, and he would have to store it on-site. If he stores it on-site, of course, he has to notify the EPA of his hazardous waste activity as a storer, and would have to receive interim status, which involves the submission of a permit application.

In essence, the generator is in tough shape if he has not received an EPA identification number by November 19th. Of course, you may be referring to a generator who has notified EPA, but EPA has not, for one reason or another, gotten back to him with the number. My belief is that that would happen very rarely. If such a situation were to develop, I think the only problem would be to convince a transporter that it was EPA's fault, and that he could take the waste legally.

In that situation, I would certainly think that EPA would be willing to confirm the matter on behalf of the generator.

I don't know exactly how that is going to be worked out, but I don't think that's going to be much of a problem.

Mrs. Richard: Mary Ella Richard. I am only an elected town official. I would like to know if there is any mechanism worked out for Federal, State, County or Town coordination on jurisdictions, regulations and enforcement, or will one jurisdiction be saying, "Oh, that's the State," or "That's the Feds," or "That's the County"?

Mr. Pelley: The way the Resource Conservation and Recovery Act is supposed to work is that the whole management of hazardous waste will be turned over to State jurisdiction as soon as the states have designed a program which qualifies for authorization.

Dr. Tanenbaum: Would you ask the questioners to give their names, please?

Mr. Pelley: All right.

Mrs. Richard: Is there a deadline for doing that?

Mr. Pelley: Not specifically a deadline, but there are fairly extensive requirements placed upon the state to modify their hazardous waste management programs so as to qualify for authorization. Right now it appears that what is referred to as "Phase I interim authorization" will be forthcoming for New York State in the Fall.

Mrs. Richard: Thank you.

Mr. Pelley: Yes?

Ms. Saltzman: Friends of the Earth. I understand that there are plans, starting now, for the composting of sludge in Nassau County by 1981. The question I have for EPA is, what is the status of the pretreatment standards that EPA is supposed to be drawing up in terms of the heavy metals that may be dumped directly into the sewage system? Are standards being drawn up so that the sludge which is presumably to be reused will not contain heavy metals?

Mr. Pelley: I am not terribly familiar with pretreatment standards for heavy metals. That is something to be taken up in a different office under the Clean Water Act. That is not under the Resource Conservation and Recovery Act.

Ms. Saltzman: You don't know anything about the treated sludge?

Mr. Pelley: If sludges are generated that are toxic by virtue of their concentration of heavy metals, such sludges would be regulated as hazardous waste under the Resource Conservation and Recovery Act hazardous waste management program. They would have to be pretty high in concentration of heavy metals. The concentration for heavy metals identified in the regulations under the Resource Conservation Recovery Act are the concentrations specified for Federal drinking water standards factored up by one hundred. That drops most municipal sludges out of the Resource Conservation and Recovery Act hazardous waste universe.

Ms. Saltzman: You mean that there can be a hundred times higher concentration of heavy metals in a hazardous waste sludge than in minimally acceptable drinking water?

Mr. Pelley: Right. There will be some sludges that will be hazardous waste and will have to be managed as such. If every sludge generated by a municipal treatment plant were to be considered a hazardous waste and were subject to the same requirements as any other hazardous waste, it would overwhelm the system by anybody's estimation. It simply could not be managed.

Ms. Saltzman: You are aware that the sludge is going to be available for public use and, possibly, could get into groundwater?

Mr. Fleisher: That's an error. It will not be available for public use.

Mr. Pelley: I am not familiar with this issue, but I am told it will not be available for public use.

Mr. Fleisher: The sludge that will be generated in the Nassau County Compost Sludge Program will not be available for general use. It will be used only in specific places where the soil won't be used for growing crops. You couldn't go and get a couple of yards to put on your garden or front lawn, but a professional who maintained your house might use it in the garden. It won't be completely free of all heavy metals. So, it will only be employed in certain nonagricultural uses, possibly for the growing of potted plants, for example.

The present program is a study and no compost will be released at all for any reason until it does meet at least the minimum standards that we are setting.

Mr. White: Michael White. I am with the Town of Huntington.

Just to bring back a point from an earlier questioner. You are saying that RCRA will eventually go into the State's jurisdiction for enforcement. However, we are finding that the State is already having difficulty enforcing its own SPDES regulations. I don't see how they are going to be able to do this. I was wondering what your feelings are.

Mr. Pelley: I don't know how the grant mechanism works. I expect that the State will expand its hazardous waste program in proportion to the extent of this task, and it is enormous. We are pretty stretched at the Regional Office right now. We are near the limit of our administrative resources, and I certainly expect the State will need more, but there are sound reasons for turning it over to the State.

One of the earlier questions reflected a concern about multiple jurisdictions, and the confusion that people complain about, understandably, in dealing with government agencies. The whole intent in turning this program over to a state is not to do so until such time as the state is

fully prepared and has demonstrated its preparedness and has the proper resources, and then to turn it over in order to maximize efficiency, by letting each state handle the problems that are specific to that state.

There are, of course, requirements that states have relatively consistent planning so that no drastic differences will exist from state to state, and that there is a relatively uniform national hazardous waste management program.

Hazardous waste management will not be turned over to the states until they have fulfilled fairly extensive requirements under the whole authorization process, which will demonstrate to EPA that they are up to speed.

Mr. Bradley: Can I ask two questions?

One is, where does the medical use of any hazardous chemicals fit into the scheme of things, both in developing new drugs, and in other medically related research?

It would be a strange oversight, considering that a lot of these chemicals cause cancer.

The second question is, why is there no list of radioactive wastes in the regulations?

Mr. Pelley: That is correct, there is no list of radioactive wastes in the RCRA System right now. There will be. That particular list of hazardous wastes is still being developed at headquarters.

Also, another list, that has either just been issued or is very soon to be issued, is the list of infectious wastes. Those are the wastes that we associate with hospitals, veterinary hospitals, etc.

You mentioned your concern about the hazardous wastes generated through medical research. There is no special treatment accorded that category of wastes under the Resource Conservation and Recovery Act. I don't know if the states are going to opt for some kind of special treatment for that category, but the feeling is that they are just as hazardous, regardless of their origin in medical research. There is no intent to reduce medical research. Such institutions will simply be required to follow the same cradle-to-grave hazardous waste management that we require of all categories of generators.

A listing of radioactive hazardous wastes will be promulgated, but I don't know exactly when.

Mr. Lawrence: George Lawrence from Hazardous Waste Disposal, Incorporated.

I have attended various seminars where studies have been reported indicating that only approximately ten percent of the industrial waste generated in this country can be handled properly.

Now, with that in mind—and I hear it from various people—from your Department and State agencies—with that in mind, can you tell us how the EPA expects these new regulations, on a Federal level and State level, and various other levels, to provide a workable system when, in fact, the capacity to handle the industrial waste is not available to the generator? If you are in agreement with that, what steps will the EPA take for other State agencies to increase the capacity to deal with the hazardous and toxic wastes that are generated?

Mr. Pelley: It is a good question. I would like to say at the beginning that I don't think it is a question of there being inadequate technology or, let us say, that the state of the art is such that we are capable of addressing only ten percent of the hazardous waste that's generated. That isn't true. However, it is true to say that there is a shortage of capacity for proper disposal, treatment or storage of hazardous waste, and it is something that, quite frankly, RCRA hardly recognized at all.

In fact, RCRA really says nothing about the siting of hazardous waste facilities, which are in very short supply, as everybody knows. What we have encouraged generators of hazardous wastes to do all along is to construct storage capacity on-site, or to notify EPA of an existing installation by applying to EPA for a permit for storage capacity on-site. It is a very short term, interim kind of measure to take, but we did anticipate the problem that once November 19th arrives, the hazardous waste management program will be in effect. We are now talking about cradle-to-grave hazardous waste management, and one management practice that many generators may find themselves almost compelled to adopt will be on-site storage of hazardous waste during the period prior to the construction of adequate management facilities, disposal facilities, etc.

My understanding is that that's what many generators are doing; and many who were not in a position to construct new facilities or to make use of existing storage facilities, for which they could receive interim status, are sometimes in the difficult position of having to pay substantially more for hazardous waste management because of the shortage of facilities. It is a very real problem, and there is no easy way of getting from where we are to where we want to be—where we think most people, most of the public at large, nationwide, want us to be.

It is going to be a period of difficult transition. I do know that there is a great deal of interest, in certain circles of the private sector, anyway, to get started with the construction of hazardous waste treatment facilities. I have talked to people recently from the private sector who want to know what they might expect EPA to require in the way of high temperature incinerator design so that they can start developing preliminary designs and cost estimates.

Final detailed technical standards for the second phase of the permitting of hazardous waste treatment disposal or storage facilities are coming out now. The standards are coming out in sections early next year, and when they do come out, these questions will be answered. Then the private sector, which wants to get on with building the incinerators and with building the chemical and biological treatment facilities can do so. In the meantime, there is a shortage of facilities, and, therefore, higher prices to be paid, as you would expect, and there will be generators who will be starting to have this waste stored on-site.

That's one of the reasons we urge these generators to get into the system and notify us if they want to store hazardous wastes, and be sure to get their permit application in to us prior to November 19th, so that they can get the automatic interim status and continue to operate the way they have been operating.

Mr. De Costanza: Anthony De Costanza, New York State Department of Environmental Conservation.

I think you are not answering Mr. Lawrence's questions. I think he is saying that there are not facilities already located or running to handle hazardous wastes right now. As I understand the issue, it seems that siting is the crucial issue, the same as it is with sewer plants, garbage incinerators and what have you. Where do you put these facilities, and who has the power to make the decisions stick?

If you go through all the technical aspects, if you say that environmentally a certain spot is best, who has the authority to make this stick as the best spot?

Mr. Pelley: I think I did answer that question. As I indicated, the Resource Conservation and Recovery Act does not address siting right now. That is a problem, and I acknowledge that it is a problem. You are simply pointing out again that it is a problem, and I agree with you.

Mr. De Costanza: You are talking about storing more waste, yet you can't handle what you already have to store, so there is no point in marshalling the forces to store in a more elaborate fashion. You have to immediately address how are you going to handle what you now have to store.

Mr. Pelley: Our thrust is not to go on doing what we have in the past in the way of inadequate storage. We are talking about permanent storage facilities which, presumably, would meet higher technical standards of operation.

You may feel that you don't see it happening. That's an opinion, which, of course, you may advance. The Resource Conservation and Recovery Act has not come to terms with siting, and I am not going to stand here and try to tell you that it has. I do not see a problem with this, but I don't think that what the U.S.E.P.A. is doing is not constructive, and I don't think that we are simply forcing generators to turn to the alternatives; that is, to continue bad practices from the past. We are urging, and, in some cases, the system does force generators to store hazardous waste on-site for lack of somewhere to send it. That's not the best situation imaginable, but it is reality at this point in time.

We do want to make sure that those storage facilities do, in fact, store the hazardous waste rather than allow it to enter the environment. We will be out inspecting the storage facilities and we will be enforcing the law, and I don't think that it is going to be twenty-seven years until new facilities for treatment and disposal are available.

Mr. Santino: Alex Santino, Suffolk County Department of Health Services.

I'd like to know if the EPA plans any kind of workshop for local government officials. I work with industrial wastes and hazardous materials in Suffolk County, and we are starting to get calls from concerned industries about their compliance efforts. So far, the best I can do is refer them back to the EPA, which is getting jammed up with phone calls.

I was wondering if the EPA has any plans to conduct a series of conferences or workshops to, perhaps, update local officials about what they should be doing for RCRA.

Also, I would like to know about your Industrial Regulatory Interpretive Memoranda (RIM). Have any been published? What are the publication dates? Do you expect to have a lot of them published soon, or will they be gradually published over a series of years?

Mr. Pelley: As far as the first part of your question goes, we did have a number of seminars over the Summer. I spoke at, I think, five seminars this past Summer, presenting RCRA and getting started with an awareness of what RCRA involves in specifics. The training of the regulatory community is clearly not complete at this point. I don't know exactly what EPA is planning in the future with regard to more seminars. I do see a need for them, and I expect more will be scheduled. I know that a lot of private concerns are conducting RCRA seminars. I was at one just this week, given by Dow Chemical in New Jersey, which was extensive and very good. This kind of thing is going to be prevalent in the future.

I think, as we perceive the need for seminars for people like yourself, we will, indeed, be providing some kind of workshop or seminar.

As for your second question, the appearance of the RIM's in the Register has been delayed, as much to my regret as everybody else's, because I get questions regularly about material that I have been told over and over again is going to be issued in the Regulatory Interpretive Memoranda. I can't recall exactly; I am not sure this is correct, but I think one of them did appear recently, and I haven't had time to read it. The last time I asked, I was told that they would start coming out in October, which, of course, has come and gone.

I really don't know what to tell you to do, except to call the Headquarters' office which generates these things, and place your inquiry with them. As a matter of fact, what you can do is call our Cincinnati Office of Solid Waste Publications. It's listed in the May 19th issue of the Federal Register, which came out with the bulk of those Federal regulations. A gentleman by the name of Ed Cox, whose name, phone number and address are in there, will place you on the mailing list, and you will get these things as soon as they are available.

Mr. Fleisher: You made some reference to biological infectious hazardous wastes. This is something that's been forgotten in setting the regulations. It was supposed to be done in October, and from what I understand from a meeting last week, it is only now being thought about. We have hospitals that don't have proper waste disposal. We would like to see something in writing that we can use for enforcement. We don't want these wastes to go indiscriminately to the landfills and incinerators, if not to protect the general public, then at least to protect the people that work there.

We have some very uncomfortable and sloppy things happening that we won't go into at the moment. If we could say that the Federal Government declares that everything that comes out of certain sections of hospitals is hazardous, we could do something about it. Right now, we are trying to control infectious hazardous waste without the force of regulation behind it.

Do you know for sure this is coming out very shortly?

Mr. Pelley: I know for sure that infectious wastes are supposed to be on the next list of hazardous wastes that are issued. They will be coming out prior to radioactive wastes. They were supposed to have been out now, as you indicated. If you could call me in my office in New York, I can find out specifically when they are going to be available. I recognize that what you are referring to is a serious problem, and I'd like to see those infectious wastes identified once and for all, also.

Floor: I would like to ask if there is significant potential as far as industrial waste changes are concerned?

Mr. Pelley: Can you elaborate on what the industrial waste changes may be?

Floor: There may be particular by-products of a particular industry that another industry can use in their process.

Mr. Pelley: Well, that can be done, and I wouldn't be at all surprised if that becomes far more common in the future, because special consideration is given to the need to use resource recovery in the hazardous waste regulations under RCRA, and this is something that's already occurring. It probably will occur more in the future, because a recycling or recovery operation, until now, has been more costly than disposal according to conventional, traditionally practiced methods. It may now be far less costly than the newly required methods of disposal or treatment.

So because this is an area that we are interested in encouraging, there are special considerations right within the regulations to do just that.

There is a certain danger, of course, in letting this go totally unregulated, a danger that is particularly troublesome with respect to certain industries, such as ones in solvent recovery. Historically, the solvent recovery industry has not been the cleanest, smoothest running, most environmentally aware sort of operation. So, regulations to elaborate upon the provisions that are now in the regulations for recovery/reuse types of operations, are also forthcoming. However, I don't know exactly when they will be out.

Mr. Newing: Bernard Newing from Newing Laboratory and Stony Brook Department of Chemistry.

Marv Fleisher made a comment before on the protection of workers against biologically hazardous waste, and it would seem to me that the regulations for protecting workers from biologically hazardous waste should be quite different from those protecting the groundwater and the environment from biologically hazardous wastes. Would you comment on that?

Mr. Pelley: That would be the case. I don't know what OSHA prescribes in this regard, but the standards that apply to work places are almost always far more lax than the standards that apply to the environment at large. All I would say in response to that question is that infectious hazardous waste is to be regulated under the Federal Hazardous Waste Management System as prescribed by RCRA, and the regulations will be forthcoming fairly shortly. In fact, the proposed list of infectious wastes may have come out this morning while we were on the way here; I don't know.

Mr. Newing: Where are they coming from?

Mr. Pelley: In the case of most process wastes, numbers, in terms of concentration, are not prescribed. For example, you might list a particular spent solvent as a hazardous waste, regardless of the concentrations of contaminants in that spent solvent. On the other hand, there are some wastes that can only be identified by specific tests to determine the concentrations of heavy metals in them. I don't expect the infectious wastes to be so identified by concentrations, or any such parameter. It will probably be just like the other process wastes listed in the hazardous waste regulations, identifying infectious hazardous wastes simply as something like specific types of dead cultures, not by some particular kind of biological test.

I am not terribly familiar with biological laboratory wastes, but they will be identified shortly.

How New York State Addresses These Problems: NYSEFC

PICKETT SIMPSON
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(Read by Dr. I. Wilenitz)

Abstract

The 1978 Industrial Hazardous Waste Management Act directed NYSDEC to develop regulations to implement RCRA, and mandated a siting board and criteria for the siting of hazardous waste disposal facilities. The siting board, composed of the Commissioners of Health, Transportation, Environmental Conservation, State, and Commerce, and three lay people (two from the Judicial District where the facility will be located) is to be appointed by the Governor. Siting criteria include consideration of adjacent lands, population density, transportation routes, groundwater conditions, surface water and flow, air pollution criteria, public health risks and type of facility to be constructed. Siting procedures have been coordinated with SEQRA to minimize paperwork. The implementation portion of the law assigned NYSEFC responsibility for the design, construction, operation and financing of hazardous waste treatment and disposal facilities (HWTDF's). In addition, NYSEFC was to have studies done on HWTDF technology and the advantages of public and/or private management of HWTDF's. Alternative management plans were developed for one, two or three high-technology HWTDF's, using methods such as resource recovery, solvent recovery, fuel blending, high temperature processing, land disposal of residues, aqueous treatment, and possible stabilization capability. The financial analysis revealed that the Internal Revenue Code doesn't allow tax-free interest to be applied to revenue bonds issued for the purpose of treating hazardous waste, since it fails to meet the present IRS definition of solid waste. The Hazardous Waste Disposal Advisory Committee developed a summary report to the Governor and Legislature. They recommended that NYSEFC should prepare an RFP for a high technology HWTDF to be designed, constructed, operated, maintained, and financed by a private entrepreneur, on a state-owned site whose location is to be determined by the State; that NYSDEC should develop disposal standards, a waste transport manifest system, final siting criteria, lists of high priority wastes targeted for the facility, and should examine high technology disposal options; and that the Governor and Legislature should develop appropriate financing, including tax benefits, financial incentives and federal financial assistance. The major problem that is foreseen is local opposition to HWTDF siting. Public opposition has frustrated siting efforts in other states. It is hoped that greater emphasis on public involvement, input and understanding will mean greater public acceptance.

The drama of Love Canal, West Glens Falls, and the Hudson River PCB problems have resulted in New York State taking definitive steps toward solving its management problems with industrial hazardous wastes. Two major pieces of legislation indicate the forward progress being made and are those which specifically address responsibilities of the New York State Environmental Facilities Corporation.

The first of these is Chapter 639 of the Laws of 1978, the Industrial Hazardous Waste Management Act of 1978, which gave specific responsibilities to the Environmental Facilities Corporation and the Department of Environmental Conservation, the former with implementation direction, and the latter with regulation direction.

With respect to the regulation of the generators, transporters and disposers of industrial hazardous wastes, the New York State Department of Environmental Conservation was charged with specific responsibility to develop regulations tied very closely to the Resource Conservation and Recovery Act. Also, under that same section of the law, a siting board and criteria for the siting of disposal facilities was mandated. The siting board is to be appointed by the Governor, upon receiving notice from the Department of Environmental Conservation that a request for certificate and permit have been received. The board, itself, will be comprised of the Commissioners of Health, Transportation, Environmental Conservation, State and Commerce, and three lay people, two of whom must be from the Judicial District in which the facility is to be located.

The siting criteria include such things as adjacent land, population density, transportation routes, groundwater conditions, surface water, surface water flow, air pollution criteria, public health risks, and type of facilities to be constructed. The procedures for the siting have been meshed with the procedures for SEQRA so as to avoid duplication of paper work and public hearings.

The implementation portion of that law required the New York State Environmental Facilities Corporation to add the design, construction, operation and financing of hazardous waste treatment and disposal facilities to the kinds of facilities which it was already empowered to construct, such as sewage treatment plants, water manage-

ment facilities, storm water collection systems, sanitary sewer collection systems, etc. An additional mandate to the Environmental Facilities Corporation was to have studies performed on technology and the advantages of public and/or private management of disposal facilities. The management study was performed by Booz-Allen & Hamilton, the technical studies by Rensselaer Polytechnic Institute. The law further established a technical advisory committee to the Environmental Facilities Corporation, consisting of various State Commissioners and representatives of the industries affected.

The study performed by Booz-Allen & Hamilton was entitled *Options for Establishing Waste Management Facilities.* It covered a number of issues relating to the future of hazardous waste management in New York State and included why new hazardous waste facilities were needed, a strengthened regulatory program that would insure that future facilities are properly operated, a recommended State strategy, and the presentation of options with respect to ownership and operation. These options included no additional State actions, private initiative with private development, State ownership and operation, and private development with State assistance. Each of the advantages and disadvantages for these options was evaluated in this report. In submission to the Governor and the Legislature, the Environmental Facilities Corporation recommended public ownership of the site with private development of the facilities so as to take advantage of the expertise available within the disposal industry and to minimize the financial risk to the State.

With respect to technical studies, Rensselaer Polytechnic Institute completed two studies. The first one was entitled *Hazardous Waste Processing and Disposal Practices, Best Technology.* This was a review of the various technical processes which could be used in the disposal and management of hazardous wastes generated within New York State. The second study was on the potential for the application of resource recovery practices in the hazardous waste processing and disposal industry, again as it related to waste generated principally in New York State. A third study, generally describing the health and environmental effects of hazardous waste generation and disposal practices was performed by RPI, but to date, this report has not been released by the Corporation. The main thrust of these studies showed the need to establish a varied technology treatment train to encompass the wide variety of wastes that are generated by the various industries in New York State. This was to be borne out in later studies conducted by the Corporation.

As these initial reports were completed, the State Legislature saw the need to expand this effort and, subsequently, passed a law in 1979, specifically Chapter 283 of the Laws of 1979, which mandated further action by the Environmental Facilities Corporation. This required an additional study on the need of regional hazardous waste management and disposal facilities, including the best technology for said facilities, and the necessary marketing and financing of these facilities, including the use of revenue bonds. The law further required the establishment of yet another Committee known as the Hazardous Waste Disposal Advisory Committee. This Committee was, again, made up of both State Commissioners of Departments and lay people involved with technology and business. The Committee was chaired by Dr. William Shuster of RPI.

To perform the major technical study, Camp, Dresser & McKee, environmental consultants of Boston, was retained by the Corporation to do technical, marketing, and financial studies. They produced a report entitled *Technical, Marketing and Financial Findings for the New York State Hazardous Waste Management Program.* This report was used in the deliberations of the Hazardous Waste Disposal Advisory Committee and is background material for their subsequent report.

Major findings of the Camp, Dresser & McKee report were:

1. There is an estimated three hundred twenty-five million gallons of non-radioactive industrial hazardous waste generated each year by some four thousand State industries.
2. One thousand one hundred seventy of these firms generate more than ninety percent of the total.
3. On-site capital intensive facilities dispose of approximately one hundred eight million gallons of the waste, while major off-site commercial hazardous waste facilities process an estimated nineteen to twenty-three percent of the remaining two hundred seventeen million gallons of wastes. The balance of one-hundred seventy-one million gallons of hazardous wastes may be discharged into municipal sewers, transported to unapproved disposal sites, shipped out of State, or disposed of by on-site non-capital intensive methods.
4. Almost as much waste is shipped out of the State as is imported to the State for treatment.
5. A proposed plan of three major alternatives for treatment facilities was developed by CDM. These were options for three, two and one regional facility(ies). These facilities would be High Technology Treatment Facilities involving a number of methods, including resource recovery, solvent recovery, fuels blending, high temperature processing, land disposal of residues, aqueous treatment, and possible stabilization capability.
6. The report also performed an in-depth study of the marketing and financing of these facilities and included a number of interviews with industrial companies, present disposal firms, potential generators and present generators, and covered the areas of the need for the facilities, the interest in long-term contracts, and the financial potential for developing and maintaining the facilities. Among the financial alternatives studied were general obligation bonds, revenue bonds, and private financing. A major impact on potential development is represented by the fact that the Internal Revenue Code does not allow for the same tax-free interest to be applied to revenue bonds issued for the purpose of hazardous wastes since it does not meet the present IRS definition of solid waste.
7. A special section of the report dealt with various means of disposal with an extra dissertation of the effective use of cement kiln technology.

The plan presented a number of interim plans, since the major facility development was estimated to take from six to eight years from start of planning to full operational mode. These interim plans included techniques of segregated secure storage for organics, secure storage for inorganics, and physical stabilization of wastes. Temporary storage for organics is considered to be important so as to allow for their ultimate destruction and to minimize the effects on health and the environment.

During the writing of the CDM report, the Hazardous Waste Disposal Advisory Committee, referred to above,

met on a regular basis during the months from October 1979 to February 1980. This Committee was comprised of William W. Shuster, P.E., Ph.D., Acting Chairman of the Chemical and Environmental Engineering Department of RPI, Chairman of this Committee, Robert S. Amdursky, Esq. of Wilkie, Farr & Gallaher, John V. Connorton, Esq., of Hawkins, Delafield & Wood, L. Eugene Crowley of Solomon Brothers, Jeffrey A. Lane of Associated Industries of New York State, David Axelrod, M.D., Commissioner of Health, Robert F. Flacke, Commissioner of Environmental Conservation, William D. Hassett, Jr., Commissioner of Commerce, and Howard F. Miller, Ph.D., Director of the Budget.

The Committee's function was to advise the Corporation and the Governor's Office on the progress of the Camp, Dresser & McKee report, and to review other matters related to a well-planned implementation program for the State of New York. To complement the CDM efforts, the Committee also reviewed legal issues on the control of hazardous wastes, closure and post-closure analysis, the effects on industry of regulation, generic environmental impacts, public information and citizen participation programs, and implementation vehicles that could be employed by the Corporation in developing facilities.

Culminating the Hazardous Waste Disposal Advisory Committee efforts was a summary report on the various issues studied and a compilation of a list of recommendations to the Governor and the State Legislature. These include:

1. The Environmental Facilities Corporation should prepare a Request for Proposal for a High Technology Treatment Facility on a site to be owned by the State; these facilities would be designed, constructed, operated, maintained and financed by a private entrepreneur.

2. A franchise area for a sector of the State should be established so as to insure an adequate waste stream for purposes of marketing. Also, certain high priority wastes should be qualified and quantified and mandated for treatment at this facility.

3. The State should search for and find a site for this facility.

4. Determine the high priority wastes and disposal options so as to make the ultimate disposal of wastes by land prohibited.

5. DEC and EFC should study the EPA cement kiln demonstration program and encourage its development so as to evaluate the potential use of that capacity within New York State for the disposal of hazardous wastes.

6. The State should investigate the potential for at-sea incineration, using such ships as the Vulcanus, which has recently been purchased by Waste Management Services of Illinois.

7. DEC should develop a manifest system for the transport of wastes, finish the siting criteria required by the Industrial Hazardous Waste Management Act, adopt closure and post-closure requirements and develop standards for generators, transporters and disposers of industrial hazardous waste.

8. The Governor and the Legislature should develop an appropriate legal and funding mechanism to limit the liability and provide funds essential to satisfy the level of liability so identified.

9. Petition the Internal Revenue Service to include hazardous wastes within the definition of solid wastes disposal facilities, which are eligible for tax benefits.

10. Extend the State tax benefits, presently available to water pollution and air pollution control facilities, to hazardous waste disposal facilities.

11. Develop a small industry package to provide technical assistance for proper management of hazardous wastes and to provide financial incentives for good disposal practices to the smaller industries such as tanning and electroplating.

12. Encourage Federal financial assistance in any program for the disposal of hazardous wastes.

13. Explore agreements with other States and Canadian provinces.

14. Develop an extensive Public Education and Information Program.

15. Identify sufficient funds to implement the recommendations of the Hazardous Waste Disposal Advisory Committee.

Since the time of the Committee Report, the Department of Environmental Conservation, the Department of Health, and the Environmental Facilities Corporation have been making efforts to implement the recommendations of the Committee. This progress has been inhibited somewhat by the present State Budget situation. The report was issued in March 1980, and unfortunately, was timed too late for adequate legislative and budgetary action in the present fiscal year. Further, the Legislature adjourned in June without passing either a Supplemental or Deficiency Budget.

However, efforts are proceeding on a number of the recommendations, using redirected funds from other programs for which activities are being postponed, until other funds are identified. These current efforts include the development of a detailed work plan by EFC, DEC and DOH on the Committee recommendations, following the cement kiln program of EPA, determining the availability of at-sea incineration, investigating the preliminary needs for programming a small industry package, continuing efforts on the promulgation of regulations on siting and manifesting by the Department of Environmental Conservation, the development of a Public Information and Education Program, the preparation of a generic Environmental Impact Statement, and the development of a Request For Proposal on the High Technology Treatment Facility.

These last three items have been the areas of most of the work accomplished to date. The Environmental Facilities Corporation in concentrating its major effort on the development of the Request For Proposal. The development of the Request For Proposal will include the issuance of a public Request For Qualifications. These qualifications will include experience in the hazardous waste treatment field, the ability to design facilities, operating experience, construction experience, knowledge of storage techniques, transportation and processing of wastes, as well as the financial capability of the respondent to handle the financing of the facility development.

The specific Request For Proposal that is being developed will call for detailed planning, design, construction, operation and maintenance, and the financing of a High Technology Treatment Facility on a site to be identified and secured by the Environmental Facilities Corporation. By locating the facility on State-owned or State agency-owned land, it is hoped that not only will acquisition be facilitated, but wider acceptance will be gained by the general public in assuring proper development and long-

term care of the facility. The RFP document, itself, is being prepared by specialists in environmental engineering, environmental law, financing and environmental analysis.

In order to secure a proper site for the facility, a consulting geological and geo-technical firm has been placed under contract to examine the potential for siting facilities in the State. They will be examining not ony surficial, but sub-surficial geologic conditions. In gathering information for the project and Request For Proposal, a number of large waste disposal firms, consultants, and construction firms have been consulted on the relevant issues.

Complementing the EFC proposal development are two major elements being conducted simultaneously by the Department of Environmental Conservation. These are the preparation of a major public information and education program, and the preparation of a detailed generic Environmental Impact Statement.

To assist in these efforts, a special ad hoc hazardous waste advisory committee has been established by Commissioner Flacke, comprising representatives of various State Departments, the public environmental interest, local government, industry, and the State Legislature. They will be advising on various elements of the overall effort. Scheduling of this program is very key, and it is hoped that a responsive program can be developed by the end of January or the early part of February of 1981.

Finally, let me summarize by stating that the major problem we foresee is the siting of the facility and public opposition to these efforts. In reviewing the recent news literature in this area, one comes across the term "NIMBY," which stands for "Not in My Back Yard." Efforts in other states have been frustrated by this public opposition and, in Massachusetts, have resulted in the banning in perpetuity of sites initially selected by that state for the disposal of hazardous wastes. It is hoped that by getting greater public involvement, input and understanding, the program will gain greater public acceptance.

How New York State Addresses These Problems: NYSDOT

GEORGE NAGINEY
N.Y. State Department of Transportation (NYSDOT)

Abstract

NYSDOT's authority is based on the State Transportation, Environmental Conservation, Navigation, Highway and Vehicle, and Traffic Laws. The regulations promulgated under these laws are contained in Title 17, Transportation, of the N.Y.S. Official Compilation of Codes, Rules and Regulations (NYCRR). These regulations are based on the premise that package design should be strong enough to prevent damage or release of material when in the transportation system. The shipper bears the primary responsibility for proper packaging and identification. NYSDOT is responsible for cleanup and removal of spilled petroleum products. Cleanup may occur through the spiller, a contractor called in by NYSDOT or by the use of town, county, or state forces. Operation of the Oil Spill Prevention and Control Program is covered by four separate parts in Title 17 of NYCRR. Part 30 pertains to the licensing of major facilities, part 31 covers financial responsibility, part 32 lists actions to be taken in case of discharge and part 33 describes duties of county and town superintendents. NYSDOT is not an emergency response organization. Initial response to a hazardous material incident is the responsibility of local government. In the event of a hazardous incident, four named organizations can provide assistance. The Transportation Research Board of the National Academy of Sciences has identified the ten most critical issues in hazardous materials transportation, and these are discussed.

This speech is a paint-brush approach to a complex problem. The longer I work in hazardous materials, the greater is my appreciation of how well the shippers and carriers are doing their job.

I will cover six points.

First, I will cover the DOT's legal authority. Second, the rules and regulations adopted; third, our oil spill program. Fourth is to explain what State DOT is not.

I will then suggest four useful phone numbers, and finally, I will report on the ten most critical issues in hazardous materials transportation.

First, DOT's legal authority. Five laws—Transportation, Environmental Conservation, Navigation, Highway and Vehicle and Traffic Law—are the base for DOT's authority.

DOT's primary regulatory authority in hazardous materials evolves from Article 2, Section 14f of the Transportation Law. This section, added in 1976, authorizes the Commissioner of Transportation to promote safety in the transportation of hazardous materials by all modes.

Article 7, Section 161 of the Transportation Law, provides additional authority in regulating common and contract carriers of property, who operate under the authority of the Commissioner of Transportation when they are transporting hazardous materials.

Under Article 23, Section 23-1713 of the Environmental Conservation Law, DOT, in consultation with the Department of Environmental Conservation, was mandated in 1976 to develop a system of certified routes for the transportation of liquefied natural and petroleum gas in their cryogenic state. Action by DOT or DEC relating to establishment of this routing system is currently under a legislative moratorium until April of 1981.

Article 12, Section 191 of the Navigation Law, known as the Oil Spill Prevention and Control Law, authorizes DOT to control the transfer and storage of petroleum, to provide liability for damage sustained within this State as a result of the discharge of said petroleum by requiring prompt cleanup and removal of such pollution and petroleum and to provide a fund for swift and adequate compensation.

Article 2, Section 10, Subdivision 9-a of the Highway Law provides DOT authority to prescribe rules and regulations fixing the duties of county and town superintendents in respect to oil spill control.

Two articles from the Vehicle and Traffic Law require mention to complete the legal picture. Article 9, Section 380a gives DOT authority to require the recovering of loose cargo and Article 10, Section 385, allows DOT to issue Special Hauling Permits for overweight and overdimensional loads.

My second point, State DOT's Rules and Regulations. The regulations promulgated under these five laws are found in Title 17, Transportation, of the New York State Official Compilation of Codes, Rules and Regulations. They are referenced by part numbers. Part 507, Transportation of Hazardous Material, promulgated under Section 14f of the Transportation Law became effective on April 1, 1977. In this regulation, we adopted by reference Parts 170 to 189 of Title 49, Code of Federal Regulations, the Federal Hazardous Material Regulations.

Title 49 in the portions adopted covers shipping paper preparation, packaging, marking, labeling and placarding requirements for the hazardous materials identified and listed by the Secretary of Transportation. It covers carriage by rail, aircraft, vessel, and public highway, shipping container specifications and specifications for tank cars.

In referencing the Federal Regulations, which are republished October 1st each year, we worded our regulation so that revisions in Title 49 at the Federal level are automatically incorporated into our rules and regulations.

These regulations are based on the premise that package design should be strong enough to protect the hazardous material from damage or release when subjected to the normal rigors expected in movement through the transportation system.

The shipper bears the primary responsibility. He must identify the commodity, properly package it, and prepare the shipping papers before he offers the package for shipment. The regulations have been developed over a period of one hundred fourteen years, and as Ben Davis, a former Assistant Secretary of Transportation pointed out back in 1975, "most of the problems in the movement of hazardous materials stem not from a lack of regulations, but from lack of compliance with those regulations."

Under Section 161 of the Transportation Law, Parts 822 and 823, have been adopted. Part 822, Transportation of Explosives and Other Dangerous Articles by Motor Vehicles primarily addresses driving rules. Part 823, Tariff Publication of Rules Governing Transportation of Explosives and Other Dangerous Articles prescribes the Federal DOT Rules and Regulations for Motor Carriers of Property and requires participation in the Motor Carriers Explosive and Dangerous Articles Tariff. This tariff is basically a restatement of the Public Highway and Container Specifications of Title 49. Carriers operating under the authority of the Commissioner of Transportation through this tariff publication requirement have for many years been following the applicable portions of Title 49.

Part 159, Transportation of Liquefied Natural and Petroleum Gas, was promulgated under Section 23-1713 of the Environmental Conservation Law, on February 25, 1977 before the moratorium. It is a very brief regulation and all it requires is that the applicant furnish a description of the route proposed, together with the name and address of all municipal police and fire agencies affected by the proposed routes. We intended, as a first step in this, that any application for a certified route would be a party to Federal Exemption DOT-E 6113, the Federal Regulation covering interstate transportation of liquefied natural gas in its cryogenic state.

Parts 30 to 32, our Oil Spill Prevention and Control Program, became effective April 1, 1978 under authority granted in Section 191 of the Navigation Law.

Part 33, addressing Oil Spill Prevention and Control, Duties of County and Town Superintendents, became effective on the same date pursuant to Section 10, Subdivision 9a of the Highway Law.

I will go into more detail on Parts 30 to 33 later.

Part 154, Special Hauling Permits promulgated under Section 385 of the Vehicle and Traffic Law contains, in Section 154.12, Special Requirements for Overweight Vehicles Transporting Large Quantities of Radioactive Materials. Prior to issuance of this type of Special Hauling Permit, the vehicle must have been inspected by a New York State DOT Motor Vehicle Inspector and carry a valid Certificate of Inspection. Any application for a Special Hauling Permit, such as moving a radioactive load, must have a certification attached, indicating compliance with Title 49.

Part 158, covering Loose Cargo, we promulgated under Section 380A of the Vehicle and Traffic Law, on January 1, 1976. This was primarily written to address the problem of loose material falling or blowing off a heaping truck. It has been of some assistance in regulating the haulers of hazardous waste.

DOT is responsible for cleanup and removal of spilled petroleum products. This cleanup may be accomplished by the spiller, by a contractor called in by DOT or by the use of town, county or state forces.

Operation of the Oil Spill Prevention and Control Program is covered by four separate parts in Title 17 of the State Code of Rules and Regulations.

Part 30, Licensing of Major Facilities.

Part 31, Financial Responsibility.

Part 32, Actions to be taken in Case of Discharge.

Part 33, Duties of County and Town Superintendents.

The fourth topic is what DOT is not. With the single exception of our Oil Spill Cleanup Program, State DOT is not an emergency response organization.

Initial response to a hazardous material incident is a responsibility of local government.

In the past few years, the Bureau of Fire Prevention and Control in the Department of State has provided an eight hour course on Emergency Control of Hazardous Material Incidents to over seventeen thousand police and fire personnel.

The Office of Disaster Preparedness in the Division of Military and Naval Affairs currently has available a two and a half hour slide and tape presentation for fire and police personnel. This course focuses on immediate actions upon arrival at the scene of an incident involving cargo vehicles. Requests for this training course can be made to your local county disaster preparedness officer.

My fifth point, four useful phone numbers for use in the event of a hazardous incident.

First, CHEMTREC, 800-424-9300.

CHEMTREC stands for Chemical Transportation Center, a public service of the Manufacturing Chemists Association at its offices in Washington, D.C.

CHEMTREC provides immediate advice for those at the scene of emergencies, then promptly contacts the shipper of the chemicals involved for more detailed assistance and appropriate follow-up.

The second phone number, National Response Center, 800-424-8802. The Response Center performs these functions:

First, to receive mandatory reports to the Federal Government in cases of discharge of oil or hazardous polluting materials into the waters of the United States.

Second, it is the focal point in the chain of rapid notification of Federal authorities when a pollution incident occurs; and third, it provides advice and assistance to users of the system via the Chemical Hazard Response Information System and the Hazard Assessment Computer System.

CHEMTREC and the National Response Center are not in competition; they are actually complementary to each other and cooperate fully to provide information or assistance.

The third number, State DOT's Oil Spill Prevention and Control Number, is 518-457-7362. This number will accept collect calls.

The fourth number is the Division of Military and Naval Affairs State Warning Point, 518-457-2200. Calls to this number will alert the State Office of Disaster Preparedness to your problem.

All these phone numbers are manned twenty-four hours a day, seven days a week.

My last point, the ten most critical issues in hazardous material transportation.

At this year's meeting of the Transportation Research Board of the National Academy of Sciences, these ten issues were presented by the Subcommittee on Hazardous Materials Transportation.

The issues were developed in a four-stage questionnaire process and represent the replies from hazardous materials transportation leaders in industry, government and trade or professional organizations.

Regulations—the greatest concern from virtually all quarters was with regulatory controls. Two issues emerged:

Issue 1. Harmonious international, federal, state and local hazardous materials transportation regulatory controls; and

Issue 2. The complexity of DOT hazardous materials regulations and the need to convert some of them from detailed specifications to performance based criteria.

Four issues emerged, which shared in common, specific applications of a Coordinated Systems Approach to hazardous materials transportation needs. These needs are for:

Issue 3. A national strategy for control of hazardous materials risks.

Issue 4. Training for all persons involved in the transportation of hazardous materials, including shippers, carriers, and emergency response personnel.

Issue 5. A single, national response system for incidents and accidents involving the transportation of hazardous materials; and

Issue 6. An integrated hazardous materials transportation administrative communication system among Federal and State Governments.

Two critical issues, which related to data and its use, were placed in the top ten. They were:

Issue 7. A comprehensive data system for the flow of hazardous materials by quantity, general hazard class, route and mode; and

Issue 8. The state of the art for hazardous materials transportation cost-benefit risk analysis methodology.

Legal responsibilities. The following issue received strong support from respondents to the survey:

Issue 9. Clarification of the legal responsibilities of government and private agencies involved in hazardous materials transportation.

The final issue the committee presented was:

Issue 10. The awareness of the public for the need for safety on hazardous materials transportation.

In summary, I feel the greatest benefit at the least cost could be achieved by concentrating on two of these issues: Issue 4, training of all persons involved in the transportation of hazardous materials, including shippers, carriers and emergency response personnel, and Issue 10, the understanding of the public about the relative safety of the transportation of hazardous materials.

How New York State Addresses These Problems: NYSDEC

MORRIS BRUCKMAN
N.Y. State Department of Environmental Conservation (NYSDEC)

Abstract

NYSDEC's Solid Waste Division regulates industrial and hazardous wastes, transport and storage of such, and, when material must be landfilled, the landfilling operations. NYSDEC attempts, in conjunction with other divisions, to prevent accidents to and abuses of groundwater. Prevention must be the key concern, because cleanup of contaminated groundwater is an extremely tough, lengthy and expensive task. Solid waste management is extensive in scope, since the legal definition of solid waste management facilities (SWMF's) also includes liquid wastes. Thus, NYSDEC's Solid Waste Management Division (SWMD) is involved with the composting, transportation and storage of industrial and septic wastes. NYSDEC adopted a Long Island waste management policy on June 1, 1979, relying heavily on recommendations of the LIRPB. The policy states that (1) no new landfill sites will be approved in hydrogeologic zones, 1, 2, 3, 4 and 5; (2) new landfills or extensions of existing landfills in zones 6, 7 and 8 will require a degree of protection dependent on specific site evaluations; (3) all existing landfills require final capping. It is the policy of the State to encourage resource recovery. NYSDEC is involved with incinerators and resource recovery facilities. Organic materials that could potentially pollute groundwater if landfilled will be incinerated. This will also mean, where resource recovery is practiced, that residual materials to be landfilled will pose much less of a threat. Non-hazardous industrial wastes may be disposed of at County landfills, but each waste stream must first be approved by NYSDEC.

First, I would like to explain a bit about our organization.

Region I comprises Nassau and Suffolk Counties. The section I am in is called Environmental Quality, and has three subdivisions: Air, Water, and Solid Waste Management. I am Regional Solid Waste Management Engineer.

Solid Waste Management has a scope beyond what might appear from its title. Basic regulation of solid waste management facilities, for instance, defines solid waste as including liquid waste.

Therefore, I am not involved only with landfills; I am involved with composting transportation, the storage of industrial waste, including liquid waste, and also the transportation of septic wastes and other industrial wastes.

In order to cover the title of this talk fully, I shall go beyond technical regulatory control, and present the program that we have, and the regulations that we enforce. In all fairness, I must say that, if the people with whom we are dealing encounter long delays in response situations, it is because, in the face of expanding responsibilities, my staff has recently been cut back for reasons of economy. I shall go into the matter of landfills very briefly. Although the landfills of the Island are not supposed to receive hazardous or toxic wastes, we do know that things have happened in the past and, unfortunately, may occur again in the future. In addition, even an ordinary landfill that does not receive industrial waste can be expected to generate a leachate that makes water unfit to drink.

As most of you know, we have special problems on Long Island because of the fact that we have sole source aquifers. We drink whatever goes into the ground. On June 1, 1979, we adopted a solid waste management policy, that applies only to Long Island, and in which a great deal of attention was paid to recommendations of the Regional Planning Board.

We have several rules in our policy, one of which is that no new landfill sites will be approved in hydrogeologic zones 1, 2, 3, 4 and 5. New landfills or extensions of existing landfills in hydrogeologic zones 6, 7 and 8, will require a degree of protection that will depend on the specific site evaluation. All existing landfills require final capping. These are measures which we are taking to help safeguard our groundwater supply.

We are also concerned with incinerators and with resource recovery facilities. With incineration, some organic materials that might affect the groundwater if they were landfilled will be burned. In addition, where we have materials recovery, the residual materials to be landfilled will no longer contain the materials that might possibly pollute groundwater. It is the policy of the State to encourage resource recovery. In the matter of industrial waste collection and septage, I should mention that our setup is such that the County acts as our agent under the local assistance program, so that there is greater coordination. We rely heavily upon the Counties for the last part of our inspection. In addition, we coordinate with the Counties, and are greatly in debt to them for their expertise in many fields.

As regards the collection of septage, that is administered entirely by the Counties. It has been turned over to Nassau County and Suffolk County, respectively.

Industrial waste collection is handled under a permit system. The permits are issued in Albany in close conjunction with the Region. In order to get an Industrial Waste Collector's Permit, the collector must file an application which will show the materials to be handled. In addition, the

application will show where the materials are to be delivered; and furthermore, there must be a signature from the receiving station.

When it comes to permitting activities, the processing of industrial waste, as well as resource recovery, also requires a permit from our division, so that we have knowledge of, and a measure of control over, the receiving site. There are no qualifications for an industrial waste collector. All a collector has to do is to file an application, have a vehicle at his disposal, have a customer and have a disposal site, and that's it. I think that is a serious flaw because as time goes by, I think we are going to require a greater knowledge on the part of the haulers as to what they are hauling. Otherwise, we are going to have mistakes, some of which may be honest mistakes. I don't think that the EPA manifest system for handling these sorts of things in the future addresses the matter of qualifications. However, that's a digression, since I am here to speak primarily, on what *we* are doing.

In addition to these permits, we also have a permit called Load-to-Haul Permit, required where a company, generating industrial waste, stores it on-site for subsequent removal instead of discharging into the ground, as might happen sometimes under a SPDES Permit, a type of sewage permit handled by our Water Division.

I am going to read a typical Load-to-Haul Permit with typical conditions, so as to show the scope of our regulations:

1. The following minimum standards will apply for storing and handling wastes:
   a. There should be adequate control in the storage area, for example, impervious storage pad or floor, with berms to facilitate containment of spills. Storm walls should be directed to prevent entry into the pad.
   b. Building and Fire Codes should be met where required.
   c. Wastes should be stored in leak-proof containers which are compatible with the waste materials. The container should not be corroded or leaking, and should be tightly closed.
   d. Wastes which deleteriously react with each other must not be stored directly adjacent or mixed together.
   e. Waste containers should be labeled, numbered and distinctly coded, and identified as to content in accordance with Department of Transportation Regulations.
   f. Waste drums should not be stacked more than two high, and aisles should be provided so that all drums are accessible and clearly visible for inspection.
   g. Waste drums should be stored off the ground a minimum of two inches to facilitate detachment.
   h. Wastes should be stored in a secure area.
2. Removal of wastes should be only by registered industrial scavengers.
3. Records should be kept on the premises and made available to personnel from the Department of Environmental Conservation or its agents (usually the County) upon request.
   The following should be included:
   a. Quantity and type of waste generated.
   b. Waste container inventory identification, including starting date of collection.
   c. Waste removals by scavengers including container I.D. numbers, scavenger I.D. numbers and final disposal sites.
   d. Spills. Notification should be made immediately to NYSDEC and the County Health Dept.
   e. Sampling results.
4. All records should be kept a minimum of three years.
5. A report shall be in approved form by the 15th date of each month of each year, and the report should be filed with the County Department of Health.
6. Limit the maximum time the wastes shall be stored on the site. In this particular instance it happens to be ninety days, with a maximum of forty drums. We may have sampling problems in addition.

These basically are the things we look at when it comes to Load-to-Haul Permits. Obviously, when the system is in effect, it will be able to be modified at that time, but we are keeping tabs on storage of these waste materials. We wish to stop any abuses. In the past, we have had cases of leaks that found their way into the ground, and under this system, any leaks will be in an area where they can be prevented from entering the ground.

In addition, my Division handles various odds and ends of activities. In the matter of non-hazardous industrial wastes, it would be a particular hardship to have to dispose of them at hazardous waste disposal sites. So landfills are allowed to accept industrial wastes, but each waste stream must receive the specific approval of my Division, namely, of me or of one of my assistants.

So, within the limits of our manpower, my Division regulates industrial waste, hazardous waste, transport, and storage. When material must be landfilled, we regulate the landfilling.

We hope that, in conjunction with our other divisions, we can help prevent accidents and abuses to our groundwater supply. Of course, there is the question of what can be done to restore groundwater quality once it has been contaminated. Generally speaking, that is such a tough, arduous task that our key concern has to be with trying to prevent accidents or deliberate violations.

How New York State Addresses These Problems: NY State Attorney General

JOHN PROUDFIT, Esq.
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Abstract

Initial legislation dealing with the various aspects of hazardous waste is passed by the State Legislature. The Departments (NYSDEC, NYSDOH, NYSDOT, etc.) then develop rules and regulations, and enforce these programs administratively. The Attorney General's office comes into the picture only after the departments have acted, and as a last resort. There are three stimuli that lead to legal action: (1) The Attorney General will take a case to court upon departmental request when the department is unable to enforce a regulation or permit requirement; (2) When a departmental enforcement action is challenged, the Attorney General will defend the action on behalf of the department's commissioner; and (3) The Attorney General will bring cases to court independently, usually in the form of public nuisance actions. The Attorney General's office contains approximately 20 different bureaus operating in different areas. The Environmental Protection Bureau acts as lawyers for NYSDEC and other State Departments, brings cases to court independently, and drafts proposed legislation. The technical staff is small, consisting of two scientists and one engineer. The Environmental Protection Bureau must rely on departmental expertise, particularly that of NYSDEC. It handles oil spill cases, and is looking into landfills. The Attorney General's Special Prosecutions Bureau, which deals with criminal prosecution, is working with the Environmental Protection Bureau to develop a unit and approach to deal with criminal prosecution for environmental cases on Long Island. Criminal actions are taken only in cases of flagrant violation. The Environmental Protection Bureau concentrates on civil enforcement, which is much less time-consuming. NYSDEC has been developing its own enforcement unit, which will work cooperatively with the Environmental Protection Bureau to solve matters first through administrative procedures, then through civil litigation. If the situation is flagrant and still unresolved, criminal prosecution will be used as a last resort.

The Attorney General's office really comes into the picture after the Departments have acted. I am talking primarily about the Department of Environmental Conservation, and also the Department of Transportation. In other words, the Legislature initially has passed the laws on the various aspects of hazardous wastes. The Departments develop rules and regulations, and enforce those programs. They do so administratively, and it is only as a last resort that the Attorney General comes in.

We are the lawyers for the State agencies, so that we get into the act in two ways. First of all, a department attempts to enforce a regulation, or to enforce a permit requirement. They will come to the Attorney General and say, "We have tried to do this administratively. We haven't been successful. Will you take action?" Then, we will follow up and go into court.

Now, that also may come about in another way, where a department has taken an enforcement action. For instance, they may revoke a permit, and the company or individual who has lost his permit will challenge that decision and go into court. We will then defend that action on the part of the Commissioner.

We do, in a third category, bring affirmative actions on our own behalf. Those have generally been done in the form of public nuisance actions. For instance, several years ago, Marvin Fleisher raised the problem of cesspool cleaners. We have a very small technical staff. Basically, we rely on the staff of the Department of Environmental Conservation, but we do have two scientists at this time and one engineer. Marvin Fleisher came to us and said, "We have a problem with cesspool cleaners that have toxics in them. They are getting into the groundwater on Long Island. We have a critical situation here. Can we do something about it?"

We met and, with his help, we were able to formulate a plan. We went to the manufacturers and asked them to stop using and to stop selling these toxic products on Long Island. I think we contacted thirteen manufacturers, and all but two of them agreed to do this. We instituted suit against the largest manufacturer, Jancyn, who manufactures Drainz, and that went into litigation.

Now, this case indicates some of the problems that we have, and that a number of the other speakers have spoken about, namely proof. That, for us, is a critical problem. It is very easy to talk about enforcement and say, "Well, somebody is doing something wrong. Let's enforce the law." Fine, but when it comes down to it, we have to go into court and we have to prove to a judge that, in fact, a law was violated, that there was a violation that requires some action on the part of the court; and that's a problem for us.

In this case we had a manufacturer who was manufacturing a product which we knew contained toxic ingredients. It happened that, in that product, there were two chemicals, and these chemicals had been found in the groundwater on Long Island in quantities which were unsafe. Wells had to be closed, but there was no way that we

could prove that the chemicals found in the wells were actually coming from Drainz. The only thing we could do was develop a case to establish the probability, indeed, the certainty, that this material was getting into the groundwater, and that's how we instituted that case.

As it turned out, the company entered into a consent judgement, and they did stop manufacturing the product as it had been constituted, and reformulated their product.

We knew, at that time, that this was going to be a problem because of the proof requirement with respect to other products, since their constituent chemicals had not been found in the groundwater, and we knew that we were going to have difficulty in proving our case with respect to those products.

So, from the very beginning, we sought legislation that would ban those products that had toxic chemicals in them, and we were finally successful in getting the Legislature to pass that law.

Marvin previously mentioned the law that is in effect now. It will make our job much easier because it names particular restricted chemicals, and it says what a manufacturer can do and what product he can manufacture. If he doesn't comply with the law, then it's much easier for us to secure enforcement than for us to do so where there is no law.

These, then, are the areas that we operate in. We operate as lawyers for the Department. We bring some affirmative actions, and we also draft proposed legislation.

At the present time on Long Island, we are handling, or have handled, several oil spills for the Department. We have handled a spill at a chemical storage facility, and we are looking into a number of landfill situations. We do have one pending case involving the Islip landfill, which was mentioned here previously.

Let me say tnat we, like the Department, have, in the past, concentrated on civil enforcement. That's where our strength really has been.

Civil enforcement, we feel, is an area that we can operate quickly in. When you get into the criminal area, it's much more restrictive. You have to move at a slower pace. However, we have brought some criminal actions, and we will be bringing more.

I am with the Environmental Protection Bureau of the Attorney General's office. The Attorney General's office has about twenty different bureaus operating in different specialty areas. We have a Special Prosecutions Bureau, which deals with criminal prosecution. They are now working with our bureau to develop—and this is of particular interest for Long Island—a unit and an approach, so that we will be taking more criminal actions out here.

Basically, we take criminal actions only in the case of flagrant violations. We and the Department of Environmental Conservation, in the first instance, will attempt to solve the problem administratively, then possibly through civil litigation. But if it is a flagrant situation, if we are not getting anywhere, then we may resort to a criminal prosecution. The Department has also been developing its own enforcement unit.

Now, part of the reason that we have been moving at a less than rapid pace in this area has been the resource problem. It requires a tremendous amount of resources, both in manpower and in expertise, to develop these cases. I believe we have now reached the point where we are going to be bringing more cases and more significant cases.

I might just mention that we do have a unit within the Environmental Protection Bureau that is dealing solely with Love Canal, and that has tied up quite a bit of our resources. That litigation is ongoing, as you know, and it's very comprehensive litigation.

There are two bills which the Attorney General is working on now with respect to landfills. One of these bills would require the posting of a bond as a condition of the permit, and that bonding would go towards defraying the cost of closure. One of the problems that we have with landfills is that, once the landfill is filled and there is no more room, the operator has been able to, more or less, walk off.

They may have complied with some of the cover requirements, but we know now there is a long-term maintenance problem. We are just beginning to find out with these various landfills that it takes many, many years for problems to become evident. The resources needed to handle these landfills are going to be enormous. One way that we are hoping to cope is to have a bond which would not only defray the cost of the initial cover, but would go towards long-term maintenance.

The other bill has to do with the banning of certain toxics in landfills. That's a technical bill. We are going to have to have a lot of input in that. Where that's going to go, I don't know at this point, but it is something that we are considering now. What that bill would do is to completely eliminate any of the toxics that are now prohibited from going into the landfills out here on the Island. However, they are not prohibited from going into the licensed landfills. There are two landfills for hazardous substances in the Buffalo area. We feel that even those landfills, restricted as they are, should be restricted even further. There are certain chemicals that should not be put into landfills at all, and as the technology develops these chemicals should be disposed of in a different way, probably, ultimately, through some kind of recapture and incineration.

The Attorney General is very concerned about this matter. I think that all of us in the Attorney General's office who are involved in hazardous wastes, feel that, in the environmental field, this will be the prime issue for many years to come.

Our involvement here is in the litigation aspects, and for that we rely very heavily on the State agencies. I mentioned the Department of Transportation and the Department of Environmental Conservation. I left out the Department of Health, which is also very much involved in this area.

Dr. Tanenbaum: Thank you, Mr. Proudfit.

We are pretty well on schedule, so that I think we could have a few questions now, after which we will break for lunch, and plan to reconvene promptly at one-thirty. I hope you will all be with us at that time.

Mr. Newman: I have a question. I think, as our analytical technology improves and as our instrumentation improves, we are going to be finding more and more materials in our drinking water at lower and lower concentrations. Now, the fact that they are there doesn't mean they are harmful. Have any judicial decisions been made on appeals from the lower concentration levels that have been set for many of the compounds that are found in the water?

In other words, numbers have been picked, literally picked, and the fact that these numbers can be either too low or too high is subject to appeal by scientific evidence or discussion. Has any decision been rendered?

Mr. Poudfit: I am not aware of any particular case. I think your question is very well taken, however.

One of the reasons why we brought the Drainz case, and why Marvin Fleisher became concerned about the cesspool cleaners, is the fact that we have become more and more sophisticated in testing, and will become more and more sophisticated. It is logical to say, "Well, maybe those chemicals, those organics or what have you, have been in the water for centuries and only now we are discovering them in our testing." But as a legal issue, we haven't gotten there yet, to my knowledge. We would really have to defer to experts on that.

Mr. Newman: How do you feel about an appeal from one of your cases, from the legal aspect, on a point like that?

Mr. Proudfit: Well, I would say, as a lawyer, I wouldn't have too much trouble if the Health Department came along and said, "We think that this is a safe level," because in litigation, as far as experts go, we can get an expert to testify to anything. One will always be able to find an expert who disagrees with a given permissible level, but the court is not going to put themselves in a position of making that decision. I once had a case which involved clamming out in Great South Bay. There is a standard level of fecal coliform count, used to determine when to close a water body to shellfishing. That standard was challenged and was upheld. It's a very difficult thing to challenge standards.

There are people, even in our Department, who, amongst themselves, are not sure that this is a rational standard. We are not sure that this is the best standard, but it is the only standard we have, and the court was not going to upset it.

Mrs. Richard: Mary Ella Richard; East Hampton Town.

We have a problem that came up of a gasoline leak from a gas station contaminating some groundwater. Now, I don't like to see government and business in an adversary relationship because we want business to succeed as much as we want to have clean, safe drinking water. I was notified, through the property owner, that the company owning the gas tanks will not replace those tanks, which means that the establishment is out of business. What is the function of government in this case? Is there any recourse that the towns have to insure safe drinking water, but also to insure that businesses don't go bankrupt?

Mr. Proudfit: I don't know whether I can answer the bankruptcy part. I can tell you when we get a complaint of a gasoline storage leak, the Department of Transportation will go in, first of all.

Mrs. Richard: They have been most helpful.

Mr. Proudfit: They test the tanks. If, for some reason, they are not permitted to go in and do that, we have gone into court and obtained Court Orders. Under the Navigation Law, the Department of Transportation has an absolute right to inspect for oil leaks.

Mrs. Richard: That's fine, but the company doesn't want to replace them with new tanks.

Mr. Proudfit: If they are going to stay in business, they would have to, and that would get at your question in a bankruptcy. If they can't afford to replace those tanks—

Mrs. Richard: (Interposing) But whose responsibility is it? Is it the oil company's that owns the tanks.?

Mr. Costa: You are saying they are not going to replace them?

Mrs. Richard: The tanks are sealed. They can't be used at the moment. They are temporarily out of business. Who gets the new tanks?

Mr. Proudfit: I think that's got to be between the local operator, whoever is running the station, and the company. We wouldn't become involved in that. Under the law, the only area we can be involved in is the safe operation.

Mrs. Richard: It is not the Town's responsibility either. In other words, it is between the property owner and the oil company?

Mr. Proudfit: That would be right.

Mrs. Richard: Thank you.

Floor: You mentioned the Drainz product earlier. Since they removed the questionable chemicals, why is the product still illegal in Suffolk County?

Mr. Proudfit: The product is not illegal in Suffolk County under State law. In fact, after it was brought to us and we had initiated the lawsuit, they reformulated the product, and then when this law went into effect, the reformulated product would not have met that standard, so they had to reformulate again. I believe we have just gotten test results on it, and it does comply with the new law.

Mr. Costa: There are two separate laws we are dealing with here: the local Suffolk County Law, and the State law. The local Suffolk County Law puts the onus on the company to prove their products will not damage the groundwater in any way. To my knowledge, they haven't submitted the evidence to Suffolk County yet. I believe our office is working on protocol to determine the proper level of testing we will accept for proof. When that is done, the product may be accepted. I don't know for sure at this time.

Incidentally, the law does not address the effectiveness of the product at all. It is only whether it poses potential harm to the groundwater.

Mr. Kane: Julian Kane.

I have looked over the Suffolk County Regulations for septic tank installation and maintenance and as I recall, they prohibit any chemicals from being used and just call for periodic dumping, preferably at least once a year.

Now, we have different regulations in Nassau. I wonder if my interpretation is correct with respect to Suffolk?

Mr. Costa: The regulations disapprove of anything being added to cesspools, including acid, but to my knowledge, that regulation has not been enforced. I don't know whether it is a law or a policy.

Mr. Ackrose: Pete Ackrose.

It is a standard of the Suffolk County Department of Health Services.

Mr. Kane: If it is a standard, does that mean it is not a law? We have regulations with a small "r" and with a large "R," and we have differences between the Counties as to how the regulations are written or enforced.

Mr. Costa: It has always been an enforcement problem, as you know with regard to the detergent ban, for example, that Nassau County had one law and Suffolk County had another.

With respect to additives, something might be banned under County Law, but generally acceptable under State Law. I would hope that some coordination would come with those laws. I can't say at this point what's going to happen. I do know that, with regard to the acids, there has been little enforcement of that rule, although it is a rule on the books.

Dr. Tanenbaum: I think we have time for one more question. There will be an opportunity to ask questions this afternoon. So, if I don't get to you this morning, write your questions down and ask them then.

Mr. White: Michael White, Town of Huntington.

I have been trying to get a list of all certified industrial

waste staff engineers who are licensed in New York State, and there seem to be some problems. We have been forwarded a list from Mr. Bruckman's office, but it lists only six percent of the total. We have been reviewing, for instance, the SPDES Regulations, which refer to a listing of certified firms, but we can't find the list. I wondered if there was a list immediately available to Suffolk County.

Mr. Bruckman: The permits are issued in Albany, and we get lists from Albany which are not always up-to-date. Because of limitations in the size of my staff, we find it difficult to keep the list current at all times.

Our latest list, which is, I think, a couple of months old, is available. At the same time, I cannot guarantee that it is accurate. If you ever come across someone not on that list, the only thing to do is call up my office. If I don't have it available, I will have to call up Albany.

Dr. Tanenbaum: If you will be kind enough to save your other questions for this afternoon, we will see you at one-thirty.

How Nassau County Addresses These Problems: NCDH

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Abstract

NCDH acts on behalf of NYSDEC in enforcing permit requirements, particularly those of the State Pollutant Discharge Elimination System (SPDES). Companies not having permits or whose discharges exceed groundwater standards are given a compliance schedule for meeting permit requirements. When compliance schedules are not met or NCDH finds permitted discharges exceeding groundwater standards, meetings with the company are scheduled to try to solve the problem administratively. Legal action by NYSDEC is a last resort. The use of chemicals by concerns not having permits constitutes a significant problem. Each year in Nassau there is approximately a 10% turnover in business and industry, so monitoring and the administration of the permit system are ongoing activities. Periodic reinspections and monitoring surveys are used to insure that companies' activities coincide with those described on their permits. The provision of sewers and adoption of sewer use ordinances also help to protect groundwater. Nassau's ordinances require that homes hook up to sewers wherever possible, but it is unlikely that this could be enforced, due to lack of manpower. Despite preventative efforts, many harmful products find their way into the groundwater. A consumer survey done several years ago identified potentially harmful household products used in large quantities and in ways which allowed them to enter the groundwater. This led to passage of the State Cesspool Cleaner Ban. Dry cleaning establishments are a widespread problem. NCDH has instituted a program that requires that those dry cleaning establishments connected to sewers route the drainage from their steam condensing units to sewer drains. Establishments not connected to sewers must collect and store the wastewater in 55-gallon drums which are to be taken away by a licensed scavenger. A NCDH survey of commerce and industry has been used to begin development of a comprehensive, computerized data base. Information acquired includes the company name, zip code, the state industrial classification code, the appropriate water and sewer district, any sewer connections, types and amounts of chemicals used, chemical code numbers, licensed scavengers used by the company, etc. With this information, NCDH can correlate findings of contamination with the probable source(s). Inventories will be sent to the Fire Marshal to make him aware of potential dangers in case of fire.

I would like to cover in a little more detail some of the things we were talking about this morning on the subject of how the Nassau County Health Department addresses the problems of toxic and hazardous materials handling. We are an agent of the New York State Department of Environmental Conservation and act in their behalf in seeing that anyone who is permitted is following the permit requirements. We collect samples for analysis to check against the companies' self monitoring program. One of the main programs is the State Pollutant Discharge Elimination System (SPDES). This is a program in which a firm which is discharging a liquid into the ground or surface waters, or anywhere other than into a sewer, has to have a permit. There are, at the present time, about fifty-five companies in the County that are permitted, and about twenty more that are in different stages of the permit application process. Companies having good quality effluents (when they are first permitted) are notified of effluent discharge limitations and given a schedule indicating when they have to have samples analyzed. We inspect them at intervals, and they have to report on the quality of the wastes that are being discharged into the ground. We check and make sure, of course, that what they do discharge doesn't exceed the groundwater standard limitations that are set.

There are other companies that are either new or whose discharge doesn't meet the ground water standards, and they are put on a compliance schedule, which lists dates when they have to hire a consultant, design a facility, and install the facility. We follow up on those dates and make sure that the compliance schedules are met.

There are occasions when a compliance schedule is not met, or when a company exceeds one or more of the established discharge limits. In that case, we collect the information, and try to correct the problem in meetings with the company. If the problem cannot be solved by informal meetings, we refer the matter to the Department of Environmental Conservation, where a legal hearing is held, and action is taken.

Another large category of possible problems comprises the use of a discharge permit. In a survey a few years ago administered by the Nassau County Department of Health and financed by the CETA Program, we surveyed all the manufacturing facilities within the County. We believe that about eighty-five percent of all dischargers were contacted. The program produced thirty-five hundred

survey forms. There are about three hundred companies that use chemicals, but not all generate waste.

Someone who buys a fifty-five gallon drum of chemicals and bottles it doesn't necessarily have a waste product. We identified all the ones that did have wastes and we tried to get them under the permit program. Our point is that if a company claims that it is not discharging waste, it is obviously storing it, and having it taken away by some method or other. Initially, we call it a no-discharge situation.

Everybody was required to have a permit—a rather simple one—and had to report to us the quantity of chemicals used and what waste was generated. Only licensed scavengers were allowed to take away the wastes, and they had to report to us on a yearly or six-month basis as to what wastes were taken away.

This program has recently been switched over to the Part 360 Solid Waste Management Program because Albany thought it would be a better method of handling it legally. Under this new arrangement, the program is being handled in about the same way. In his talk, Morris Bruckman read off some of the requirements that we put in permits, i.e., storage in suitable containers, drums that won't leak and so on. That's our "no-discharge" program.

About one hundred and eighty companies are permitted in this manner, and, eventually, about two hundred and fifty companies will be covered. There is about a ten percent changeover in business and industry in the County every year, so that some companies will be going out of business and new ones coming in. It is an ongoing program, an ongoing monitoring program.

We do reinspect and, occasionally, test the industrial cesspools outside a plant to make sure that all the waste is going into drums to be shipped out via licensed scavenger, and not simply into the cesspool. Information on the quantities of raw chemicals that a company is buying must be provided fcr our department. Then, if there are four industries of the same type, say electroplaters, using solvents for cleaning, and three of them have ten percent waste, whereas the other claims to have only one percent, we can go in there and say, "Prove what you are doing differently." We have devious minds.

Another method of attempting to eliminate sources of groundwater contamination is the provision of sewers and a Sewer Use Ordinance. Nassau County has a Sewer Use Ordinance. Any home located close to a sewer system has to connect up within two years. This hasn't been enforced vigorously because of the limited capacity of existing sewage treatment plants. With regard to industrial discharges, the Ordinance says that no more than certain levels of any chemical may be discharged into the sewer system. The groundwater discharge limit is approximately the same as can go into a sewage treatment plant. So, just because an area becomes sewered, it doesn't eliminate the problem that we still have with industry. The problem still exists: if we purify the effluent enough to get into the system, we concentrate the contaminant in the sludge and are required to have it hauled away for proper disposal.

There are many other sources of groundwater contamination besides industry. It is very easy to take the attitude that big industry is the bad guy, and is responsible for all the contaminating. We did another study several years ago, also funded under a CETA Program, to look into consumer products that are used by people in the County. We did a survey with one of our permanent staff and several CETA people, looking at the retail stores, hardware stores, supermarkets—any place that would sell the products that you might use in your home. These products were broken down into categories of paint and varnish removers, cesspool cleaning chemicals, solvents, etc. There were about twelve different categories, and we tried to determine, by categorizing within them, which products were used in large quantities, which were used in a manner that would most likely result in their getting into the groundwater, and which of the products had substances in them that are harmful to the environment. Using this information, we did our first test of the program and, of course, came up with several cesspool cleaning chemicals.

That was the first part of the consumer products study which resulted in state legislation banning the use of certain cesspool cleaning chemicals in Nassau and Suffolk Counties. We have, however, identified other categories of compounds, used by the homeowner, which are serious, potentially polluting chemicals, paint removers in particular. You either wash them off the side of the house or wash out your paint brush in them and pour them down the drain. They are, for the most part, if not in all cases, more than 95% methylene chloride, which has been identified as a hazardous chemical substance. It is questionable whether it is cancer-producing or not.

There are many other products containing trichloroethane and tricloroethylene, which are hazardous chemical solvents, and there is, at present, no restriction on their sale. You can mix them with the paints and then pour them down the drain.

There are several substances sold as laundry additives that can be sprayed on your clothes before you put them into the laundry. There is a solvent product that is 100% 1,1,1-trichloroethane. These are products that have to be looked into.

We did a study a couple of years ago, and it is slightly out of date now. We have recently been notified that there is going to be some funding under a program that we requested, for Nassau and Suffolk Counties to look into consumer products and try to determine what other consumer products should be, if not regulated, at least the subject of some kind of educational program for the consumer.

We have identified some consumer products that are not necessarily a water hazard, but at least the public should be notified of them.

Many hair sprays and room deodorants have propellants. In many cases, the propellant is methylene chloride. We are all concerned about fluorocarbons affecting the atmosphere, but if you are spraying in a bathroom with the door closed, you may be doing considerable damage to your health and if you happen to be smoking a cigarette at the same time, you could be causing tremendous problems.

I can see somebody spraying a baby's crib because it smells a little bit, and putting the baby back in. The baby is now breathing methylene chloride. It is not a water problem, but I think the public should be made aware of the situation.

Other consumer products we are talking about include the dry-cleaning chemicals used by professional dry cleaners. These fluids, for the most part, contain tetrachloroethylene. The dry cleaners are very, very careful about collecting any of the solvent. It is a very expensive chemical, so they don't want to waste it. They use an exhaust system that actually sucks in the vapors at floor level. The vapors are then adsorbed in activated carbon

filters, which are steamed to drive off the solvent. The steam-solvent mixture is condensed, and the solvent is separated from the water layer. They pour off the solvent and return it to the system, while throwing the water out in the back yard. If you ask them, "Don't you realize you are doing something wrong?" they reply, "No, it's insoluble in water."

Nothing is insoluble in water! The solubility of tetrachloroethylene is 0.02%. This is two hundred thousand parts per billion. If there are *fifty parts per billion in the drinking water,* we shut your well off. So you can get the magnitude of the problem.

We surveyed all of the dry cleaners in the County, and found that each one dumps a couple of gallons a day. If you multiply the amount over a number of years, that's an unnecessary amount of chemicals going into the groundwater. We are undertaking a program with them. Any who are connected to the sewers are made to change their plumbing so that the drainage from the steam-condensing units go into the regular drains to the sewer. The treatment at the sewage treatment plant will remove the material by aeration and/or dilution to a safe level.

Any who are not connected to a sewer have to dump their contaminated water into fifty-five gallon drums, to be taken away by a licensed scavenger.

The part they don't like is that it costs them about a dollar a gallon to get rid of the contaminated water, whereas they used to dump it in their back yard at no cost to them. We are looking at the environment, of course, and not the cost. The cost will have to be passed on.

As I said before, we did a survey of the commerce and industry in the County. All of the data from the survey that showed companies using chemicals we put onto computer cards, ordinary IBM cards. We categorized the companies, and each card now gives us the name of the company, the zip code, the state industrial classification for the industry, the water district, the sewer district, if any, whether the company is connected to a sewer or not, code numbers for the chemical, how much chemical is used, who the scavenger is and so on. With this particular program, we can run the cards through the sorter, and, for any given district, we can print out who uses what chemicals and in what quantities. This is the start of what I hope will be a good computerized file. We will then be able to query the computer as to who uses a particular chemical in a given area, and receive an immediate listing. We will send copies of these lists to the Fire Marshal so that when there is a fire in an industrial building, they know what chemicals are being used there. On one occasion, a few firemen died by running into a fire in a facility that stored chemicals, because they didn't know it was necessary to use their Scott Air-Packs.

We are faced with a number of problems in getting our work done. The first one, of course, is a problem that every governmental agency has, and one that is probably going to get worse. We don't have enough people to handle, or enough funds to pay for, the tests and the work. When I say not enough people, I mean not only in my section, but also in the county laboratory that does the analyses for us. They can handle a certain amount of work, and are overloaded half the time doing the drinking water well analyses. Our work is necessary because we are the section that is responsible for preventing the contamination.

Another problem is the need for specific standards. There are many, many chemicals being used in industry and commerce, for most of which there are no specific effluent or drinking water standards. The standards that were set up by DEC under Part 703, the Effluent Discharge Standards, list eighty-seven compounds, most of which are pesticides, with limitations on what can be discharged to groundwaters. However, there are very few of these compounds, other than the heavy metals and nitrates, that are addressed in the drinking water standards.

We tell dischargers that, according to Part 703, there is a zero discharge standard for benzene, and they can turn around and point out that you are allowed to have benzene in your drinking water—since it is not restricted by the drinking water standards. The guideline suggests that you shouldn't have more than fifty parts per billion in drinking water. It makes it a little difficult at times to tell a man to spend thousands of dollars to build a treatment system to remove all benzene in a situation like that.

There have to be more specific standards. I don't know whether they should be set by the State Government or the Federal Government, but certainly it isn't within the authority of the County Health Commissioner to set up standards of this type. We are working, at present, under guidelines. Although we are enforcing them as standards, they are not written legal standards. The drinking water and discharge standards must be expanded to include most, if not all, of the chemicals in use.

Some of the present limitations are for nondetectable concentrations. That is, by the means available *now.* We are now testing, without difficulty, for parts per billion, and we will very shortly be testing for parts per trillion.

We do not have sufficient background information. Are these chemicals normally in the environment? If we find them at the parts per trillion level, does that mean they are environmentally unsafe, or that there has been industrial contamination?

Another problem, of course, is what do you do with the waste that you have now isolated from treated effluents and that has to be taken away by industrial scavengers? We require that the company generating the waste store it and have a licensed scavenger take it away. Later, a gentleman representing the scavengers will explain their problems. There is no place in Nassau and Suffolk County for the legal landfilling of hazardous wastes. There are very few places in New York State other than in the Buffalo-Rochester area. New Jersey is cutting out its facilities or restricting their use by out-of-state scavengers. It is costing more and more to dispose of industrial wastes. We even have some products for which we have no disposal options at all. There is no place to get rid of PCB's, or wastes contaminated with high levels of PCB.

We have had chemical spills where the soil is contaminated and from what I understand, the only place to which you can haul it is southern Maryland. At forty dollars a yard, or at costs of that magnitude, it gets a little expensive, expecially when you have thousands of yards of contaminated soil to dispose of.

This morning someone spoke about a company that went out of business, rather than put in a new tank. What do you do about a company that is filing bankruptcy because it can't afford to spend fifty thousand to one hundred thousand dollars to meet the regulations? Places in Suffolk and Nassau Counties have huge quantities of contaminated soil. We have a huge company that filed for bankruptcy and has thousands of yards of contaminated soil. Right now, we are digging it up, putting it on the ground on plastic

sheets and covering it, and hoping we can find someone to haul it away or treat it. Probably, the property will have to be sold, and, hopefully, there will be enough money from the assets to take care of the contaminated soil.

As was mentioned this morning, in a paper that was read by Dr. Wilenitz on behalf of Pickett Simpson of the Environmental Facilities Corporation, this agency was set up to try to determine what are the methods for treating and disposing of these materials, and where best to place them. A study was done by Camp, Dresser & McKee, based on data collected by the Department of Environmental Conservation some years ago. At best, that data was faulty. We checked out the list for Nassau County and found that they were greatly underestimating the quantity of hazardous wastes that was generated in the County. It was a mail-in survey. People mailed in forms indicating what chemicals were used, and many of those who got the forms said they didn't understand what was asked for. In particular, many of the industrial chemicals have a common name, and a proper chemical name. The dry cleaner refers to using PERC, and many of them insist it has nothing to do with tetrachloroethylene. They claim PERC is PERC and tetrachloroethylene is something different, whereas PERC is the common name for tetrachloroethylene. When we surveyed printers, we asked "What do you clean the rollers of your printing press with?" They clean with "roller wash." Roller wash happens to be methylene chloride and other similar chemicals.

One company was asked if it uses vinyl chloride, and it said it used twenty-five thousand gallons of vinyl chloride. So, as soon as you get the form, you know there is a mistake because vinyl chloride is a gas and doesn't come in gallons. When we investigated the discrepency it turned out that what was used was a wash for vinyl wallpaper.

I point this out to show that you can't conduct studies based on erroneous information.

If the Environmental Facilities corporation were to start to build a plant today, it would probably be ten years before it was in operation. It hasn't even been decided whether there is to be one major facility for the State; two of them, one for the northern tier and one for the southern tier; or four, one for each corner. Once that is decided, it has to be determined where the Environmental Facilities Corporation is going to put them, and there will have to be a Siting Committee. Obviously, we are not going to allow one on Long Island; Westchester is not going to allow one there. Once it is decided where to put them, the type of facility has to be decided and the design prepared.

Meanwhile, we have this huge quantity of chemicals that are being generated that the EPA said we are going to stack up and store. However, Nassau County doesn't permit you to store for more than ninety days in a given quantity. So, we are back to Catch 22 again. We don't want generators to store because, obviously, we don't want thousands of drums of hazardous chemicals stored on anyone's property in Nassau County, since hazardous materials are the cause of all the problems we have been having throughout the country now. So, something is going to have to be done, and done a lot faster than it has been.

There are some interim methods devised to get rid of chemicals, whether it is disposal on the ship, Vulcanus, which is the floating incinerator that has been used for years in other countries, or whether it is in destruction by high temperature in a cement kiln, or by other various methods. Something has to be done, and we can't keep studying and studying. Something has to be done today.

A final topic that I want to mention is one of what is clean. We have a chemical spill, caused by an accident or other cause. We have a chemical spill contamination problem, and the one who caused it has to clean it up. How clean is clean? Do you clean it up to the pristine condition we want the environment to be? Do you clean it up to a condition comparable to that of the water in other parts of the County? Do you clean it up in the place where it is spilled, or the plume also? Do you clean it up to the degree that's economically feasible?

Economic feasibility depends on whom you are asking. If it is not my money, it is economically feasible. If it is somebody else's money, it may not be economically feasible to him.

In cleaning up some of the major gasoline spills (which are not even considered major any more because there are worse ones), we are talking about millions of dollars and that's before we even started cleaning up the environment. Something is going to have to be done. Whether it is by establishing new laws, or whether it is by the courts deciding on the basis of laws already enacted, someone is going to have to determine what's clean.

Somebody caused a spill. The ground water is contaminated. Either he is going to have to clean it up or pay for someone else to clean it up. You can't expect someone ten years from now to pay to clean it up. Something must be done now.

We need programs to insure cleanup of abandoned waste sites. Someone is going to have to put up the money to clean up and restore these areas and groundwater to suitable environmental conditions. The groundwater is a resource we can't do without. Certainly the one who caused the pollution should be the first one required to clean it up, not the people who drink it.

How Suffolk County Addresses These Problems: SCDHS

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Abstract

SCDHS initiated an extensive groundwater monitoring program in late 1976. To date, nearly 8,000 samples from community water systems, non-community water systems, and private wells have been tested for halogenated hydrocarbons in common usage and for other organic compounds. N.Y.S. guidelines (50 ppb for individual compounds and 100 ppb for total) have been exceeded by 4.1% of community water systems and 6.0% of non-community water systems and private wells. The distribution of contaminated wells is widespread and not highly centralized. SCDHS advises owners of community water systems to stop using the contaminated wells and switch to alternate, uncontaminated ones. For non-community water systems and private wells, the owner or manager is advised to either connect to public mains, if feasible; deepen the contaminated well; relocate the well; or use activated carbon treatment to purify the water. To prevent further groundwater contamination, Suffolk County has enacted the following: (1) Article 12 of the Sanitary Code (adopted 7/79, effective 2/80), regulating the storage and handling of hazardous and toxic materials: (2) A local law (effective 9/15/80) enacted by the Suffolk County Legislature, banning the sale of any cesspool additive containing organic materials unless authorized by the Commissioner of SCDHS; and (3) Article 6 of the Sanitary Code, limiting the use of on-site treatment facilities in certain areas of the County on the basis of land use and population density. Aldicarb contamination, detected in 1979 in Suffolk's East End groundwaters, has emerged as a serious public health problem. An initial survey of some 330 wells near potato farms indicated that 23% exceeded the recommended 7 ppb guideline for Aldicarb. Union Carbide and SCDHS combined their efforts to conduct an extensive eight week sampling effort for Aldicarb. Nearly 8,000 samples were collected from wells within 2,500 ft. of potato farms. Of the private, community and non-community wells tested, 13.5%, 7.4% and 8%, respectively, exceeded the 7 ppb guideline. Very high concentrations were rare. The critical question that must be addressed is the health effects of long-term, low Aldicarb concentrations in groundwater.

My presentation is on the extent of groundwater contamination, Suffolk County's actions and programs for handling the problem, and the problems encountered in enforcement and recommendations for future action.

For years, groundwater has been considered immune from contamination by organic compounds. When Suffolk County became aware of the identification of a few synthetic compounds in Nassau County, in late 1976, an extensive monitoring program was initiated to determine the presence and concentrations of selected halogenated hydrocarbons in groundwater.

At first, the program concentrated on community water systems, but was later expanded to cover non-community water systems and private wells. To date, almost eight thousand samples from community and non-community water systems and private wells have been examined for the most commonly used halogenated hydrocarbons; namely, trichloroethylene, tetrachloroethylene, trichloroethane and trichlorotrifluoroethane. On a few occasions, testing was performed for other organic compounds such as benzene, toluene and vinyl chloride.

Of all the five hundred twenty-seven community water systems tested, twenty-two, or 4.1 percent, exceeded the New York State guidelines of fifty parts per billion for individual ingredients and one hundred parts per billion for the aggregate. Of the forty-five hundred non-community water systems and private wells, two hundred sixty-nine, or 6.0 percent, exceeded the guidelines in certain areas such as East Patchogue, North Amityville, Centereach, Hauppauge, Mattituck, Deer Park, Bellport, Holbrook, Bay Shore, Medford, Islip Terrace, Wyandanch, West Babylon, Patchogue, North Lindenhurst, South Farmingdale and elsewhere.

Irrespective of the validity of the actionable levels which have been utilized since 1976, Suffolk County, as a responsible health agency, had no alternative but to assume that drinking water containing the organic contaminants above the recommended levels is hazardous, and to act accordingly.

In the case of community water systems, the purveyor was advised to refrain from using the contaminated well and to switch to alternative uncontaminated ones. So far, this has been accomplished because of the availability of alternative uncontaminated wells in the same well field.

In the case of non-community water systems and private wells, the owner or manager was advised to take one of the following steps; connect to public water mains if accessible and fiscally nonprohibitive; deepen the well; relocate the well; use an activated carbon treatment unit.

The diversity of the products identified in the wells examined in East Patchogue, and the high concentrations

encountered, were indicative of industrial discharges and/or accidental spills.

In an effort to locate the possible source or sources of contamination, an industrial survey of the area was undertaken. The investigation revealed that an illegal industrial discharge or spill might have occurred northeast of the contaminated wells. The New York State Department of Environmental Conservation has taken legal action against a certain industrial concern. The case is still in litigation.

The joint efforts of the Town of Brookhaven, the elected officials, the Suffolk County Water Authority, the New York State Department of Environmental Conservation and the Department of Health Services were instrumental in having public water mains extended to the area.

In the North Amityville area, water samples from thirty-eight wells indicated that thirty-six, or 94 percent, had one or several halogenated hydrocarbons in concentrations above the guidelines. Again, the joint efforts of municipal agencies were successful in having public water supplies extended to the area.

Extensive monitoring of groundwater, however, can help only in determining the type and extent of contamination, but does very little toward preventing future contamination. To this end, the Suffolk County Board of Health in September of 1979, adopted Article 12 of the Suffolk County Sanitary Code, which regulates the storage and handling of hazardous and toxic materials. This Article became effective on February 1, 1980. To our knowledge, there is no other ordinance or regulation similar to this Article in New York State.

In addition, the Suffolk County Legislature passed a local law banning the sale of any cesspool additives containing organic materials unless authorized by the Commissioner of Health Services. This local law became effective on September 15, 1980.

Another piece of legislation currently under consideration is a new Article of the Suffolk County Sanitary Code entitled "Realty Subdivisions and Developments." This Article, which restricts land use and population density in certain areas of the County, is another aggressive attack by the County to further protect the groundwater. It draws upon the findings of the 208 Study, which delineated the sensitive hydrogeologic zones in the County.

In addition to the recently adopted and proposed regulations, the Department of Health Services is strictly enforcing all state and local rules and regulations to abort illegal industrial discharges. This effort will be complemented by the recently passed State Law allowing District Attorneys to prosecute violators of the State Environmental Conservation Law.

Another potential source of groundwater contamination is the sanitary landfill. At present, there are twenty active and thirteen closed landfills in Suffolk County. There are no sites in Suffolk or Nassau which are designated to dispose of hazardous solid wastes, nor is there any location in the two Counties which could be considered for such a purpose.

Apart from the traditional problems of odors, dust, rodents and insect infestation and abundance of birds often associated with landfills, two problems stand out. These are methane and other toxic gas migration, and groundwater contamination.

During the past two years, methane gas was found in high concentrations in two homes adjacent to two landfills. In addition, detectable concentrations of vinyl chloride were found in the vents of a few landfills. In one instance, measurable concentrations were found in one abandoned house and traces in another.

It is well known that when rainwater infiltrates a landfill a leachate is discharged which contains numerous materials, such as iron and manganese; it is highly corrosive because of its high carbon dioxide content. This helps to dissolve additional contaminants in the subterranean soils through which the leachate passes.

The Department of Health Services' position regarding landfills can be summarized as follows:

1. Existing landfills in environmentally sensitive areas should be phased out. Alternative solid waste disposal methods should be initiated.
2. During the interim period, landfills should be provided with appropriate air pollution control devices to prevent the accumulation of high concentrations of methane gas and other toxic gases. Wherever needed, liners or capping should be installed.
3. All structures down-gradient of a sanitary landfill should be connected to public water supplies.
4. The Department is currently entertaining the principle of resource recovery as a means of solid waste disposal.

Contamination of groundwater with pesticides is an emerging serious public health problem which has attracted national and local attention during the past year. For the first time in the country, the pesticide Aldicarb was detected in groundwater in eastern Suffolk County in August of 1979. Aldicarb is a highly toxic carbamate pesticide manufactured by Union Carbide under the trade name of Temik. It was found to be very effective against two pests which plagued potato farms for years, the golden nematode and the Colorado potato beetle. Because of its universal use on the estimated twenty-two thousand acres of potato farms in the County, an extensive monitoring program was undertaken by the Suffolk County Department of Health Services. Initial testing concentrated on wells within the farming areas or in close proximity to potato farms.

The initial survey, which included some three hundred thirty wells, indicated that 23 percent of the wells selected for testing had Aldicarb above the recommended guidelines of seven parts per billion. Although it was made clear that these wells were selected because of their presence in potato farms or in the direction of groundwater movement, the erroneous asumption was made by some officials and the news media that one-fourth of the wells in eastern Suffolk County were contaminated with Aldicarb.

We took the following steps:

Our first action was to contact the local hospitals and the Poison Control Center to inquire about their receiving or treating any cases of carbamate poisoning during the past few years. Our investigation revealed that no cases were known to these agencies.

Next, for those residents whose well water exceeded the seven parts per billion level, the homeowner was advised not to use the water for drinking or cooking purposes, and to obtain an alternative supply of potable water.

Third, in the case of community water systems, a recommendation was made to the purveyor to suspend the use of the contaminated well and to switch to other uncontaminated ones. This was not always possible, and in one particular situation, that of the Greenport Water Company,

the purveyor had to resort to treatment through the use of activated carbon because there were no other wells in the immediate vicinity.

Fourth, an attempt was also made to reduce further contamination of groundwater with Aldicarb. In view of the fact that it was the State of New York which requested from EPA an amendment of the Aldicarb label to increase the allowable dose of application from three pounds an acre to seven pounds per acre, we asked the State to take the necessary action to reduce the allowable dose to three or four pounds per acre as an interim solution to the problem. While this recommendation was being considered, Union Carbide itself asked EPA to amend the Aldicarb label to ban its use in Suffolk County, which request was granted. This request was precipitated by the massive publicity which accompanied the detection of Aldicarb in Suffolk County and by EPA's refusal to raise the acceptable no-adverse effect level at the meeting of its Toxicology Panel on February 1, 1980.

The Department of Health Services, in addition, requested assistance from the Environmental Protection Agency in testing for other pesticides in groundwater. Because of the Agency's involvement in other problems throughout the country, such continued laboratory support was not available. A request was then made to several pesticide manufacturers to test a few water samples for the possible presence of their products in groundwater. Some manufacturers responded positively to our request, and a rather limited survey was initiated. It revealed the presence of other pesticides such as Carbofuran, Dinoseb and 1, 2 dichloropropane.

In the meantime, negotiations between the State and the County Health Departments and the Union Carbide Corporation culminated in a mutual agreement between Union Carbide and Suffolk County whereby the corporation agreed to provide laboratory assistance to the County in what is considered to be the most extensive survey ever conducted in the United States for a pesticide in groundwater.

During an eight-week period between May and July of 1980, almost eight thousand water samples were collected from wells within twenty-five hundred feet of potato farms and were shipped to Union Carbide Laboratories in Charleston, West Virginia for testing.

Of the seven thousand eight hundred and nine private wells tested in Brookhaven, Riverhead, Southold, East Hampton and Southampton, one thousand twenty-three, or 13.1 percent, had Aldicarb concentrations above the recommended guideline of seven parts per billion.

Within the same township and within the two thousand five hundred foot distance from potato farms, marked variations occurred in the Aldicarb concentrations encountered.

Community and non-community water supplies were also tested. Of the sixty-eight community water wells tested, five, or 7.4 percent exceeded the guideline, and of the two hundred seventy-four non-community water supplies, twenty-two, or 8 percent did so.

The critical question which has to be addressed is the health effects of these low concentrations of Aldicarb in groundwater. Unfortunately, hardly anything is known about the long-term health effects of trace concentrations of Aldicarb.

Because of the hardships encountered in obtaining alternative sources of potable water, especially on the East End, treatment of existing sources was considered. A cooperative study with Union Carbide was initiated in December of 1979 to test the efficacy of two sizes of activated carbon filters. This study demonstrated that the large filters are effective in removing most of the Aldicarb and its metabolites for extended periods while the small ones are not.

These preliminary findings, coupled with Union Carbide's interest in alleviating the hardship imposed on residents with contaminated wells, prompted the signing of an agreement between Union Carbide and Suffolk County. Under the terms of this agreement, Union Carbide agreed to provide an activated carbon filtration system, free of charge, to residents whose well water exceeded the seven parts per billion level.

It should be emphasized that activated carbon filters are not the optimum solution to the problem of groundwater contamination with Aldicarb, other pesticides and synthetic organics. It should only be viewed as an interim solution to a rather complex, multifaceted and long-term problem.

The recent detection of synthetic organics and pesticides in groundwater in Suffolk County brings into focus serious issues and practices which should be addressed.

The first is to what extent is our groundwater contaminated with organics and pesticides. A detailed profile of groundwater should be developed so that rational decisions relating to the ban, restriction or modification of use of certain chemicals and pesticides can be made. Such decisions should take into consideration realistic health effects, economic impact and practicality of enforcement.

Probably one of the most crucial issues is the actionable levels at which a water source is considered unacceptable. This applies to halogenated hydrocarbons, pesticides and other toxic contaminants.

During the past few years, attention has been focused on the association between halogenated hydrocarbons in drinking water and the incidence of human carcinoma. Several studies compared the incidence of cancer among populations receiving surface waters (which presumably have more organic matter and are subject to chlorination) with the incidence among those using groundwater (which supposedly contains less organic matter and is also subject to less chlorination). Very few studies utilized quantitative measurements of the trihalomethanes in water. At the same time, the National Cancer Insititute demonstrated an increase in liver and kidney tumors in animals exposed to high doses of chloroform. In the case of pesticides, the situation is even more nebulous.

It is thus evident that, between the limitations inherent in extrapolation from animal experiments and the uncontrolled epidemiologic studies used in determining the health effects, the actionable levels which are currently being employed are based on many stipulations and assumptions which are subject to serious questions and challenges.

Another issue is the lack of controlled epidemiologic studies to assess the health effects of long-term exposure to low concentrations of pesticides and halogenated hydrocarbons. Because of our inability to test for the various pesticides and halogenated hydrocarbons in these trace concentrations in the past, the prospective approach is the only one which could yield meaningful results.

It is fully realized that it might be very difficult and practically impossible to design a study which could

establish a cause and effect relationship between halogenated hydrocarbons or pesticides and the incidence of cancer or other clinical manifestations characteristic of pesticide poisoning. This is attributed to the various etiologic agents which could be incriminated, the variations in the degree of exposure to contaminants in water, and other nonaqueous sources and the long follow-up period.

Despite these anticipated difficulties, it is of paramount importance that studies to explore the presence of associations be initiated. These studies should be funded by the Federal Government and conducted in cooperation with the State and local health agencies which have been heavily involved in the problem, and which have the expertise and manpower to do it.

Now, before I go on, let me show you a few slides summarizing the results of the Aldicarb survey conducted during May to July, 1980.

Table 1 lists the number of wells sampled, by Town. The wells were located in the eastern towns. This was a mass survey, which was designed to show what proportion of the wells sampled contained Aldicarb at levels exceeding seven parts per billion. As you can see, the number was 13.1 percent.

Table 2 lists results for communities in the Town of Riverhead. The numbers for wells with levels between 1 and 7 ppb are very interesting. You find areas like Manorville, with 1.3 percent, and Laurel, with 42.8 percent.

All the wells sampled were located within twenty-five hundred feet of a potato farm. Of course, the tremendous variation is due to the groundwater movement, the source of application, and several other factors; but, we take it for granted and say that 13.1 percent represents the overall extent of the contamination exceeding the 7 ppb standard.

TABLE 1
Suffolk County, N.Y.—Groundwater Aldicarb Survey
May—July 1980
Summary by Town

Town	No. of Wells Sampled	Percent of Wells Where Aldicarb Detected	
		1-7 ppb	In excess of 7 ppb
Brookhaven	222	8.1	0.9
East Hampton	434	10.6	9.9
Riverhead	2,161	16.0	16.2
Southampton	1,832	14.0	14.7
Southold	3,160	11.8	11.4
TOTAL	7,809	13.3	13.1

Zaki et al, 1980

TABLE 2
Suffolk County, N.Y.—Groundwater Aldicarb Survey
May—July 1980
Town of Riverhead

Community	No. of Wells Sampled	Percent of Wells Where Aldicarb Detected	
		1-7 ppb	In excess of 7 ppb
Aquebogue	261	19.2	16.8
Calverton	464	12.3	18.3
Jamesport	227	26.4	10.1
Laurel	299	42.8	21.0
*Manorville	76	1.3	13.2
Riverhead	604	8.4	16.9
*Wading River	230	1.8	7.8
TOTAL	2,161	16.2	16.0

*Includes homes in portions of the Town of Brookhaven.

Zaki et al, 1980

FIGURE 2

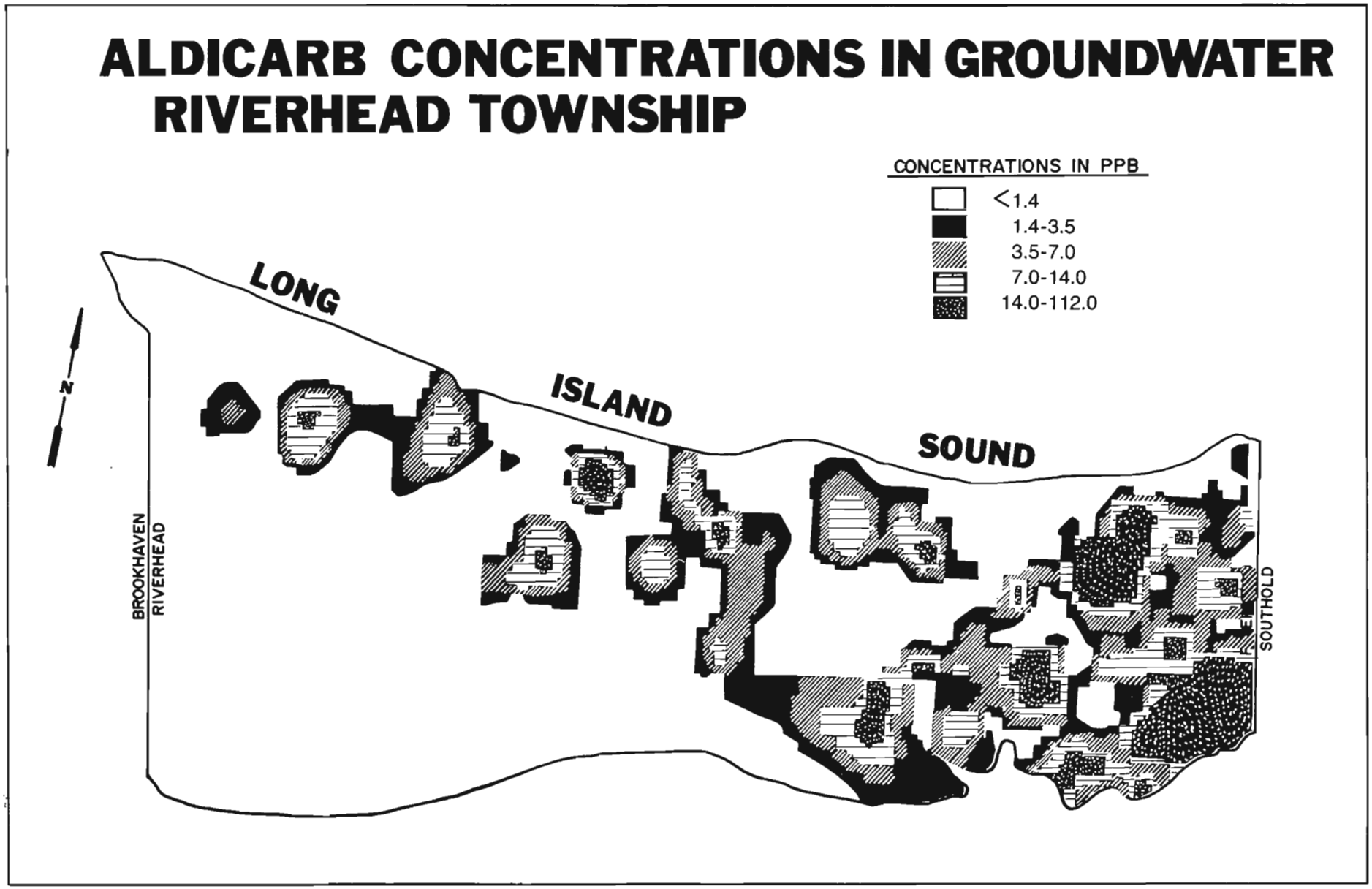
ALDICARB CONCENTRATIONS IN GROUNDWATER
RIVERHEAD TOWNSHIP
CONCENTRATIONS IN PPB
<1.4
1.4-3.5
3.5-7.0
7.0-14.0
14.0-112.0
N
LONG
ISLAND
SOUND
BROOKHAVEN
RIVERHEAD
SOUTHOLD

Table 3 is for the Town of Southold. Again, you see some variation, but it is not like Riverhead because the groundwater goes in all directions, north, south, east and west. So, you find that there is not the same extreme variation.

Table 4 is for the Town of Southampton. Again, you see great variation. There is 1.6 percent in East Quogue and 39.1 percent in Remsenberg-Speonk, a tremendous variation.

In East Hampton (Table 5), if you look at Amagansett, there is no contamination in excess of 7 ppb becaue the local groundwater gradient is southerly. The same is true of the Village of East Hampton. The highest concentrations are found in Wainscott.

The last town, Brookhaven (Table 6), had very low concentrations.

Table 7 summarizes the survey results on the basis of the Aldicarb levels measured. Of all the wells sampled, nearly three-quarters showed no detectable contamination, whatsoever. On the other hand, 13.5 percent of wells had Aldicarb concentrations higher than the 7 ppb standard. Of these, more than half had levels in the range 8-30 ppb.

Table 8 displays the maximum Aldicarb concentrations measured, categorized by the type of well. It is interesting to note that no water supply well had an Aldicarb level greater than 59 ppb, whereas one private well reached 515 ppb. However, as Table 7 indicates, very few wells exceeded 75 ppb overall. Of all the eastern towns, Riverhead is the most strongly affected. Figure 2 is a map of Riverhead with a computer-generated display of affected groundwater areas. It is strange to see some areas of high Aldicarb concentration surrounded by areas of lower concentration, and these, in turn surrounded by areas of high concentration. No explanation for this phenomenon has yet been achieved.

We found that contamination did not usually travel beyond well fields. In other words, most of the contaminated wells were found in much closer proximity to the potato fields than the twenty-five hundred feet that was mentioned earlier.

TABLE 3
Suffolk County, N.Y.—Groundwater Aldicarb Survey
May—July 1980
Town of Southold

Town	No. of Wells Sampled	Percent of Wells Where Aldicarb Detected	
		1-7 ppb	In excess of 7 ppb
Cutchogue	579	12.1	16.2
East Marion	153	2.0	3.3
Greenport	45	2.2	11.1
Mattituck	984	12.3	12.3
New Suffolk	125	10.4	12.0
Orient	335	8.0	5.4
Peconic	225	15.1	13.8
Southold	714	14.7	9.8
TOTAL	3,160	11.8	11.4

Zaki et al, 1980

TABLE 4
Suffolk County, N.Y.—Groundwater Aldicarb Survey
May—July 1980
Town of Southampton

Town	No. of Wells Sampled	Percent of Wells Where Aldicarb Detected	
		1-7 ppb	In excess of 7 ppb
Bridgehampton	290	16.9	12.4
East Quogue	124	1.6	1.6
Remsenberg/Speonk	69	21.8	39.1
*Sag Harbor	28	6.9	0
Sagaponack	216	20.4	28.2
Southampton	380	12.1	11.1
Water Mill	722	13.4	14.1
TOTAL	1,829	13.9	14.8

Zaki et al, 1980

*Included are a few homes from the Town of East Hampton

TABLE 5
Suffolk County, N.Y.—Groundwater Aldicarb Survey
May—July 1980
Town of East Hampton

Community	No. of Wells Sampled	Percent of Wells Where Aldicarb Detected	
		1-7 ppb	In excess of 7 ppb
Amagansett	42	4.8	0
East Hampton	92	6.5	2.2
Wainscott	300	12.7	13.7
TOTAL	434	10.6	9.9

Zaki et al, 1980

TABLE 6
Suffolk County, N.Y.—Groundwater Aldicarb Survey
May—July 1980
Town of Brookhaven

Community	No. of Wells Sampled	Percent of Wells Where Aldicarb Detected	
		1-7 ppb	In excess of 7 ppb
East Moriches	17	17.6	5.9
Mount Sinai	49	26.5	2.0
Ridge	94	1.1	0
Shoreham	6	0	0
Yaphank	48	2.1	0
TOTAL	214	0.9	8.4

Zaki et al, 1980

TABLE 7
Suffolk County, N.Y.—Groundwater Aldicarb Survey
May—July 1980
Summary of Aldicarb Concentration

Concentration in PPB	Numbr of Wells	Percent
None detected	5896	73.2
1-7	1068	13.3
8-30	565	7.0
31-75	345	4.3
More than 75	177	2.2
TOTAL	8051	

Zaki et al, 1980

TABLE 8
Suffolk County, N.Y.—Groundwater Aldicarb Survey
May—July 1980

MAXIMUM ALDICARB CONCENTRATIONS BY CATEGORY OF WELLS SAMPLED

	Parts per Billion
Community Water Supplies	27
Non-Community Water Supplies	59
Private Wells	515
Others	493

Zaki et al, 1980

Because of the hardship encountered in obtaining alternative sources of potable water, especially on the East End (i.e. the Towns of Southold and East Hampton), treatment of existing sources was considered.

Our problem now is that spent activated carbon has to be changed and is due to be changed within a few months. We don't now know what to do with spent carbon, and we are trying to find a manufacturer who will take it.

I have spoken, in general terms, about quality decisions, recommendations and facts of life. The last point which I would like to make is that our sophistication in technology will enable us, in the future, to detect traces of many contaminants previously unidentified. Some of these may have deleterious effects on health at higher concentrations, but not in minute traces. Other compounds may be potentially hazardous even in trace concentrations. It is most desirable, of course, to avoid exposure to all possible risks.

Society, while it seems to be willing to accept real, tangible and measurable risks in our daily activities as a result of cigarette smoking, excessive food and alcohol intake, the use of the automobile and several others, is totally unable to tolerate potential, nontangible, unmeasurable risks from food additives, pesticides, air pollutants and water contaminants.

Industry Views: APLR

GEORGE LAWRENCE
Association of Processors of Liquid Resources, Inc. (APLR)

Abstract

The Association of Processors of Liquid Resources, Inc., serves that portion of the industrial waste disposal industry that is subject to federal, state, and local hazardous waste regulations. There are three types of members: licensed industrial waste haulers; businesses that use industrial waste and by-products as stocks and fuels; and, citizens concerned about protection of the environment. The Association believes that there are two ways to prevent groundwater contamination from toxic or hazardous chemicals: first, the elimination from use of hazardous chemicals, which is not feasible; second, the provision of an organized system for the collection and disposal of these wastes. At present, there is a substantial shortfall in available capacity in the industrial waste disposal industry. Without this capacity, the many laws being promulgated (e.g., RCRA) will not protect the environment from toxic and hazardous wastes. Three years ago APLR members submitted proposals to various county agencies, including LIRPB, for the establishment of an organized system on Long Island to deal with hazardous wastes. Although supportive of the idea, the independent town and county governments were unable to develop a coordinated approach on a regional basis. There is a tremendous need for a transfer center, where wastes can be collected in an organized fashion, repackaged, and, if need be, decanted and put in a form acceptable to out-of-state secure disposal facilities. At present, many of these facilities will only rarely accept materials as generated on Long Island. Over the last three years there has been too much talk and not enough resources devoted to encouraging new capacity in the industrial waste business. The only solution to hazardous waste is to be able to dispose of 100% of the industrial waste that's generated. The industrial waste generator will find some way to dispose of its wastes. This means that wastes will find their way into town sewers and cesspools. The generator will not store them, as EPA suggests, until they rise to the height of its buildings. All the laws in the world won't change this until government recognizes that it must encourage increased capacity in the waste disposal industry.

I would like to start off by thanking the Planning Board for inviting industry to make their comments here.

I'd like to explain to you what our Association is, and the type of membership that we have made available.

First, our Association consists of the people from the industrial waste disposal industry who are faced with living up to the various regulations promulgated by the Federal Environmental Protection Agency, the State DEC, Suffolk County and Nassau County, and all of the towns and all of the Departments of Transportation and the rest of the agencies that seem to be concerned.

We are very happy that the Planning Board has recognized toxic and hazardous waste as being a problem on Long Island. Unfortunately, three years ago things were considerably different, and before the Love Canal days and before the Chemical Control days, there was very little attention given to the hazardous chemicals that are polluting our groundwater here on Long Island.

Our Association is made up of three different types of membership. The first type includes those people that are licensed industrial waste haulers, and with all due respect to Marvin Fleisher, we don't particularly care for the word "scavenger," by which we are constantly being identified. We are hopeful that some day we won't be using that word anymore.

The second type of membership includes those businesses that may use the various different kinds of waste that are suitable for use as feed stock or alternate fuel.

The third category of membership is open to environmentally aware citizens who are concerned about the protection of the environment. We hope that their input and their experience with the other members of our Association will help us all to stay on the right track, and, hopefully, resolve some of the problems that we have had to deal with.

Our feeling is that there are two ways to prevent the contamination of groundwater by toxic or hazardous chemicals. The first way is to eliminate the use of hazardous chemicals. I don't think anybody in this room would support that position. So with that in mind, we feel that the second way, and probably the only way to resolve this problem, is to provide an organized system for the collection and disposal of these industrial wastes.

There has been a lot of talk here today about all kinds of new laws, including RCRA and others. We feel that without the proper capacity to handle all of the hazardous and toxic wastes that are generated, all the laws in the world are not going to protect our environment. I might add that there is a substantial shortfall in available capability in the industrial waste disposal industry to handle the huge volume of industrial toxic and hazardous wastes that are

generated.

Three or four years ago our members—and we have been at this for a while; the Association is rather new, but our members have been around for a while—submitted proposals to various county and town government agencies to establish an organized system on Long Island to deal with all of the hazardous chemicals that are generated. Unfortunately, these independent county and town governments, while supportive of the idea of a regional system, were unable to coordinate this type of approach.

We submitted a proposal to the Long Island Planning Board (Suffolk County Planning Commission) about three years ago. Unfortunately, previous to the Love Canal era, there were very few people, apparently including the Planning Board, who considered hazardous and toxic waste a significant problem. It was very frustrating for us, who had to live with this, who had to deal with the disposal of hazardous wastes on a day-to-day basis, that the proper attention was not paid by these government agencies.

When the 208 Study was first made available, it seemed, at the time, that the major problems we were faced with on Long Island were the excessive use of fertilizer on lawns and a dog population that created a substantial problem with respect to contamination of stormwater runoff from the animal wastes.

I don't have to tell you that it was very frustrating for us, who were acutely aware of where all the hazardous waste was going. We are dealing then with industrial waste generators who were finally calling for the first time because of pressure from the County Health Department. We would ask them, "Where, up until this time, has your industrial waste been going?"

In ninety percent of the cases, they would tell us, "We give it to the garbage man and he takes it to the landfill." I am sure nobody in this room can dispute it. All of the landfills on Long Island have gotten their fair share of toxic wastes. As a result of this lack of interest and unawareness of how severe the problem was, and the inability of government to deal with us in helping to resolve this problem, our members took it upon themselves to determine how we would proceed to develop a safe disposal system.

Three or four of us operating on Long Island established what we feel is a very thorough and complete management service that we offer to the industrial waste generator. The services offered by our members accommodate approximately sixty percent of the industrial waste generators on Long Island. Primarily, our members start off by managing the industrial waste generator. By that we mean we'll interview a particular generator who is seeking our help, and we will try to identify the hazardous waste streams that he generates. For identifying those waste streams, we offer them laboratory services. After the waste stream has been identified, we will advise them as to the proper method of collecting that waste, storing it, segregating it and generally making the waste as easy to handle as possible. Without this type of a service, the generators collect their materials haphazardly, mix it all together and generate a waste stream that is virtually impossible to dispose of in any economical fashion at all. I venture to say that there are many generators, who, because of improper collection or segregation of the material, generate a waste stream that cannot be handled, regardless of price.

Most waste is collected in a fashion that is not acceptable for disposal. People collect material in drums in which the contents may consist of twenty-five percent solids and seventy-five percent liquids. It may contain water.

The specific need of the Long Island industrial community is not necessarily to have a tremendous treatment plant here that is capable of incinerating or landfilling. I don't think any one of us in the Association would attempt to convince any of the officials here on Long Island that we want to landfill industrial waste or chemical waste, or that we want to put up a big incinerator to burn hazardous and toxic industrial waste. However, there is a tremendous need for what we call a transfer center, where this material can be collected in an organized way and repackaged, if necessary, decanted and put in a form that is acceptable for some of the larger disposal facilities located out of state. Most chemical landfills will not accept materials as generated on Long Island except in very rare cases, so that this transfer center concept has been developed by our members, and we feel it is an acceptable alternative for the various government agencies on Long Island who have to deal with industrial waste problems.

All wastes will be collected and brought to these transfer centers and put in the appropriate form for disposal out of Long Island. We are not suggesting that Long Island, as I said before, should develop a capital intensive industrial waste disposal plant. We, in general, will handle all industrial waste, other than shock sensitive or radioactive waste, under the comprehensive system we have established to deal with those particular types of materials.

We remove it in drum, bulk or whatever is appropriate for the customer. In many cases, the generator, if he adheres to our advice, will realize substantial savings in the cost of disposal. Generators who do not advise us will not be served. It is our feeling that the industrial waste generator is obligated to manage his waste material in the best manner possible. We are available, our members are available, to provide all of the advice and the backup services so that generators can do so. We expect that they will do it and we demand that they will do it.

A few of our members have spent a considerable amount of time in developing an alternative fuel program. Much of the industrial waste that is generated on Long Island is of a heat-bearing nature, such as an oil or a solvent, or some other material that has a heat value. Our feeling is we have an energy problem in this country. Any material that can be made into a product whose heat can be recovered and utilized should be. Our members are doing this on a daily basis on Long Island. As a result, generators of heat-bearing materials will experience an economic benefit.

We would also provide the combustion engineering sevices for those companies that have an industrial boiler or a rotary dryer (e.g., an asphalt plant) to convert their system to burn this type of fuel.

People whom we are presently dealing with are experiencing tremendous savings in fuel costs by using our products instead of Number 2 fuel oil, which we feel should be reserved for the homeowner during the winter months.

Our members, also, in conducting this business with the generator, may take the appropriate records that are required by the various Federal, State, and local environmental agencies, and provide, in an organized way, the disposal information with regard to any particular generator's waste stream.

I might add that all of the material, or the greater part of the material, generated on Long Island has to be removed from Long Island. That's the basic purpose of the APLR.

We will receive waste in an organized fashion, put it in bulk to take advantage of the economies of moving material in bulk and transport it to an approved disposal facility in the northeast.

Such disposal facilities are becoming very rare. We suggested, two years ago, to various officials in government, including the Planning Board, that Long Island could not be dependent on out-of-state disposal facilities for all of its needs. We suggested, at that time, that we anticipated many of these disposal facilities being closed down as a result of the way they operated. We suggested that the market demand in their own home states would increase significantly, and that the availability of these companies to service Long Island industry would diminish.

This is exactly what has happened in the past three years. It would be very difficult for a generator here on Long Island to expect Rollins Environmental Service or CECOS, or a number of the other major facilities, to come in here and take care of our problems. I think we have an obligation to manage these problems ourselves, and I feel that our members have certainly taken that responsibility and proceeded with it. I think they have done a fine job.

Another service that's offered by our members is response to chemical emergencies. There have been a variety of businesses which, for one reason or another, went bankrupt, and left a "present" behind for the County or landlord. The resulting clean-up has required the services that our members provide.

There are, also, other emergency situations. An an example, one of our members responded to a call on a Sunday evening around eleven o'clock. A building in Great Neck caught fire, and the batteries that operated the emergency lighting system were heavily damaged. As a result, a lot of concentrated acid flowed down into a floor sump and began to corrode a tremendous amount of wiring that was hooked up to a computer. Our member responded to that emergency by getting over there, neutralizing the acid and getting the problem under control.

To give you an example of why we can't be dependent on out-of-state companies to do this, when our member company finished the job and was in the process of moving all of the batteries and concentrated acid out of the building, in came Rollins Environmental Services from New Jersey, perhaps eight hours after the initial call. The fact is that it would have been too late, at that time, for Rollins to effectively resolve the problem. There would have been too much damage. Furthermore, when they respond to an emergency such as this, in an area that's not local to their operations, their charges are extremely high, perhaps three times what our members charge to do the same job.

Our members have developed an organized approach to the industrial waste disposal problem in spite of the extremely complicated laws promulgated by a multitude of government agencies at all levels of government. I think one of the biggest problems we face is to determine, first off, who it is that has requirements. That has been a major job. You figure you are complying with everyone's requirements, and all of a sudden you find out there is another government agency that has jurisdiction. Certainly, there should be some method whereby government can coordinate their regulation of our business. There are just too many government agencies involved, all with overlapping requirements. All of them are unclear, themselves, as to what the interpretation of their new laws are. Most of the laws that we have to comply with are brand new. The agencies themselves have not interpreted their own laws. We have to make an interpretation of these new laws and hope that our interpretation will stand up in the future.

In spite of hysterical and inaccurate publicity that has directed a tremendous amount of animosity about hazardous waste against our members, against people who are trying to resolve the problem, I think it has been good, in a way, that the press has publicized this issue. It is time that the press began to publicize or to talk about the whole problem, and to give the proper perspective on companies in our business that are dealing in hazardous and toxic wastes. We are not the people who are discharging into the environment. We are not the people who are creating the problem of hazardous wastes. We are the ones who are *resolving* the hazardous and toxic waste problem.

You have to understand we are subjected to extremely complicated laws, and there is a multitude of agencies that we have to deal with. Although we try our damnedest to comply with everything, I think it is a physical impossibility to comply with all these laws one hundred percent of the time.

We have had to deal with local governments who disregard the real issue of our existence here and the benefits that our members bring to the community. They read the newspapers for a couple of years, and all they know, when they hear about hazardous waste, is "not in my town; go to some other town." Of course, when you get to the other town, they have the same opinion.

I have been promised for four years that a siting committee would be formed, and I have yet to see a siting committee. I wonder if we will ever see a siting committee, and if we do, if that siting committee can cut through some of the municipal problems or the local government problems that our members have experienced.

The Long Island Regional Planning Board, probably unknowingly, has rejected a proposal by one of our members for an application for a zoning change without ever getting information from our member companies and, obviously, without speaking to New York State DEC, the local Health Department, or the other environmental agencies concerned. Arbitrarily, without very much information, they ruled against this application.

We feel that the true facts concerning this application would have caused the Long Island Planning Board, or the Suffolk County Planning Department, to rule in our favor.

We, as an Association, will reject irresponsible attitudes by government officials on whatever level, who act in opposition to the best interests of our environment, our industrial community and the people who live here. The time has come for everybody to respond to the environmental problems we have. There has been so much talk over the last three years about solving these problems, and so little resources devoted towards encouraging new capacity in the industrial waste disposal business. The only way you are going to solve the problem is to be able to dispose of one hundred percent of the industrial waste that's generated. All the laws in the world, as I said before, are not going to change that until government recognizes that they must focus their resources and their attention on encouraging new industry by means of incentives or by means of some consistent policy that we can all depend on. The laws are terrific and they are a good start, but they are not going to solve the problem.

If the garbage men were to stop coming to your house, you would eventually find something to do with your

garbage, and it holds true, also, for the industrial waste generator. If the service is available to him, and he can dispose of his waste in an organized fashion, he will do it. We have had no problem with the industrial waste generators. They are anxious to comply; but if the services are not available, the generator will find something to do with his industrial waste. That means it goes down the town sewer and into the cesspool or whatever. He is not going to store it like the EPA suggests until it rises in a pile by the building.

In closing, I ask, who is controlling the environmentally toxic materials on a day-to-day basis? If you are familiar with our members, you will realize we are the ones out there every day responding to the problem, helping the generators comply with the regulations. Who responds to the disasters around Long Island? Our members do. When there is a problem, we get the call. We are at the grass roots end of this business. We have to deal with all of these new regulations in helping the generator. When is government going to actively encourage and provide incentives to our members and other companies who are willing to involve themselves in hazardous and toxic waste disposal? I think once the government recognizes that they have to encourage increased capacity in the disposal industry, that we will finally solve our problems.

Industry Views: LILWA

RALPH MACCHIO
Long Island Liquid Waste Association (LILWA)

Abstract

LILWA is an association of carters pledged to working cooperatively with municipalities, government agencies and the private sector in an effort to protect Long Island's groundwater and to insure proper waste disposal. Based on its involvement in the transportation of toxic and hazardous materials, LILWA feels that improvements in the following areas would benefit both transporter and generator and would result in the speedy and efficient transfer of industrial waste. If the generator were to have its own waste composition analysis done and submitted with a sample, this would accelerate its acceptance by the disposal site. Proper sampling is important. The sample must be representative of the waste stream being generated. Generators should decide whether to store wastes in drums or in bulk, which is less expensive, offers a more consistent waste stream and is easier and safer to load. Storage facilities should be easily accessible, and generators should retain a sample of each bulk load removed from their sites in case the disposal site questions the wastes. There should be at least one person at each generating facility who is responsible for the waste program and who will be available at the time of pickup. Protective clothing, goggles, and eye wash should be provided at the waste generation site at all times. Waste materials should be clearly and correctly identified. Vacuum loading equipment, which is much safer than conventional pumps, should be used when bulk loading. In addition, vacuum equipment can be used to clean up spilled material. Buckets of sand should be kept in the disposal area. In case of a spill, it can be used to seal off storm drains and prevent the spill from reaching groundwater.

A lot of the material in my presentation has been covered by previous speakers. Therefore, rather than to go over the material a second time, I would like to discuss and explain what the Long Island Liquid Waste Association is, and how it can work with the generator in doing the job of industrial waste disposal.

LILWA is an association of carters pledged to working together with municipalities, government agencies and the private sector in an effort to protect Long Island's groundwater and to insure proper waste disposal. LILWA's contribution to this seminar stems from its practical involvement in the transfer of waste material from generator to disposal site. Although the transporting of waste is a very basic area of industrial waste disposal, nonetheless, it is important in getting the job done. Being involved with the transportation of these materials, we have come across situations where we feel improvement would be beneficial to both transporter and generator and would result in the speedy and efficient transfer of industrial waste. We cannot cover all situations and have therefore compiled a short list of items in areas we feel are of major concern. These areas are: analysis—storage—supervision—personnel safety.

Analysis: Currently it takes between 2 to 6 weeks from the time we submit a sample to the time the disposal site analyzes and accepts the waste material. That is the normal period of time. We can accelerate this in emergencies or in special cases, but that is the general rule. Therefore, if time is important, we would recommend that the generator have his own analysis done and submitted with the sample, to accelerate acceptance at the disposal site. Proper sampling is very important in order to receive the lowest disposal cost and avoid costly return loads. The sample must be representative of the waste stream. Disposal sites have become increasingly sensitive to variations in waste streams and would think nothing of returning the load or increasing the waste disposal fee for not being representative of the sample submitted. Sampling should also be done periodically by the generator to determine the range of waste parameters. We would also caution the generator at this time against employing anyone who would dispose of his waste without first taking a proper sample and having it analyzed.

Storage:

A. A determination should be made whether to store in bulk or drums. Normally, bulk storage is less expensive, offers a more consistent waste stream and allows easier and safer loading.

B. It is very important to allow for a reserve capacity in your storage facility. By reserve capacity, we mean an amount in excess of your normal pick up. We would recommend a minimum of one week's additional storage if possible. Bear in mind, most disposal sites are not located in the vicinity of Nassau and Suffolk. A large majority are located outside the State of New York and may not be dependable with regard to your scheduling of pick-ups.

C. If possible, storage facilities should be located in areas with easy access. It should not be necessary to run a hose through shop areas to get at drums. We've had examples of pickups where we end up winding the hose around the equipment and machinery, past employees, to the far corner of the plant where they have the waste disposal tanks. This is dangerous and costly.

D. Another good practice for the generator would be to

retain a sample of each bulk load removed from his site until final disposal is completed. This would act as verification should there any question about the waste material from the disposal site.

Supervision: There should be at least one person at the generator's facility with total responsibility for the waste program and who will be available at the time of pick up. Quite often this responsibility is left with the maintenance personnel who are not familiar with industrial waste. The result may be a great deal of lost time and dangerous actions such as the mixing of loads.

On occasion, after the material has been sampled and approved by the disposal site, the carter will then go pick it up at the plant, and be informed by someone that he doesn't know exactly where the material is, but is pretty sure its out back past the second pile of drums on the right. He will go on to tell the carter to take all he can get, but not to take the ones with the green dot, because they react violently with the other material. Well, this is dangerous and someone should be there who knows what the waste material is.

Personnel Safety:

A. There should be a minimum of an eye wash and hose bib available at the waste material pick-up point. If the generator's employees are in the immediate area during loading, whether supervising or working, they should be furnished with protective clothing and goggles.

B. Waste materials must be plainly marked and in such a way as to truly represent the container contents, especially when loading from drums or small containers into bulk loads.

C. Vacuum loading equipment should be used when bulk loading. Vacuum units are much safer than conventional pumps, which pressurize the discharge line and are a potential hazard to all personnel in the area. In the event of a ruptured hose or connector, the vacuum system would tend to draw air in and keep the waste material inside the hose, whereas conventional pumps under the same condition would spray the area with industrial waste. In addition, the vacuum system has the added ability, in case of an emergency spill, to rapidly clean up the material spilled.

Another suggestion would be to keep several buckets of sand in the disposal storage area. Should there be a spillage outside the diked area and there be a low point such as a catch basin or storm drain in this area, the buckets of sand can be poured around the storm drain to prevent the industrial waste from being injected into the storm drain and, therefore, into the water table.

This concludes our short list of recommendations. If, however, in the future you require any further information, feel free to call the association's office at 293-4325. Lee Daniels, our executive director, can be reached there and would be happy to help in any manner, or to put you in touch with someone who can.

PANEL DISCUSSION

PANEL MEMBERS:

Marvin Fleisher, Nassau County Department of Health
Stephen Costa, Suffolk County Department of Health Services
George Naginey, New York State Department of Transportation
Morris Bruckman, New York State Department of Environmental Conservation
John Proudfit, Esq., Attorney General's Office
Dr. Mahfouz Zaki, Suffolk County Department of Health Services
George Lawrence, Associated Processors of Liquid Resources, Inc.
Ralph Macchio, Long Island Liquid Waste Association

MODERATOR:

Dr. Israel Wilenitz, Long Island Regional Planning Board

PANEL DISCUSSION

Dr. Wilenitz: We have all heard a bewildering array of opinions and facts today. Now is the time to try to clarify some of those points by bombarding the panel with questions. I hope you continue the procedure of stating your name and affiliation when you get up to ask your questions. I suppose you can designate the member of the panel to whom your question is addressed, but I would hope that other members of the panel would join in if they have any contribution to make on any point raised, even though they may not be directly responsible.

Mr. Lawrence, I would like to ask you a few questions if I may.

You spoke of the transfer station operation in Suffolk County, and talked about the repackaging of waste loads into a form acceptable by the ultimate disposal facility. I got the impression that you meant that on some occasions, waste loads delivered by different generators might possibly be incorporated in a single shipment, and I was wondering how that was reconcilable with the cradle-to-grave manifest system in which a particular load has a particular manifest.

The second question I want to ask—you have been very eloquent about the Long Island responsibility for disposing of toxic and hazardous material—is whether APLR has investigated the question of the kind of high technology disposal system that the Environmental Facilities Corporation report envisages?

Mr. Lawrence: In response to your first question about bringing various generators' waste materials to a central location such as a transfer center, we fully intend to. In your question you refer to a manifest that would cover that material from cradle to grave. Our suggestion, which we will make formally to the appropriate Environmental Protection people, is that possibly a facility, such as a transfer facility, be given the authorization to act as an end point for the various industrial wastes that are generated and initiate a new manifest from our point of transfer to the ultimate disposal facility.

With respect to the Environmental Facilities Corporation, I know they have been looking into who should operate a facility and who shouldn't. It is very unfortunate that we haven't been involved with them up to this point, and we hope that the information that they use to draw their conclusions is up-to-date and is relevant to the problems that we are dealing with.

We are hopeful that we will be permitted to communicate with them in the near future to provide some input from our end in developing some sort of a regional or State-run facility.

Mr. Bruckman: I cannot speak for the manifest system as such, but it would be in accordance with our procedures in the Department of Environmental Conservation. We do have provision under Part 360 for permitting transfer stations, and I think the type of station that Mr. Lawrence recommends would be environmentally desirable.

On the other hand, I can't speak for this manifest system. That's something that's being set up by EPA.

Dr. Wilenitz: Any other panel members want to comment? Any other questions from the audience?

Mr. McIntyre: I am Mark McIntyre from Newsday.

There was a conflict between you two gentlemen, I think, in your statement concerning wastes properly disposed. I am trying to get what percentage of Long Island industrial waste goes to disposal facilities in New York State. You said there were no facilities in the State, or you said there were a couple somewhere, but those were dwindling. What percent of industrial waste that comes off Long Island has to go out of the State?

Mr. Macchio: Very little goes into New York State, currently.

Mr. McIntyre: Over the last five years?

Mr. Macchio: Really, no one has the total of the amount of waste that is disposed within New York State. The greater part would go outside the State. As far as the quantity is concerned, I don't have a handle on the figure, and I don't think there are too many people who do, because no one really knows how much waste is generated on Long Island; and in terms of what percentage of that waste would go here, it changes constantly. There are disposal sites available from time to time, and at other times they are closed up for one reason or another.

Mr. McIntyre: But Alabama and Arkansas and Ohio have facilities which will take anything you send them?

Mr. Macchio: Pretty much, no matter what consistency. They are not as particular.

Mr. McIntyre: Thank you.

Mr. Lawrence: I might add that New York, until recently, had two of the most prominent secure landfills in the country operating in the Niagara Falls area. The DEC, a couple of years ago, should have provided for the continued use of these facilities. Instead, they would only

approve a particular cell, and then without thinking how quickly that cell would fill up, they did not prepare themselves for the approval of additional cells. What has been happening, and CECOS is a particular example, is that the cell that has been approved has been filled. No further area of that particular landfill has been permitted by the State; and, therefore, New York State is out one secure landfill.

Another one, operated by SEA Services, has a similar problem, in that it's reached its capacity, and there has been very little anticipation on the part of the government as to what would happen when we reached this point. We have very few places to go now with that type of industrial waste. The nearest available landfills of that nature are in Ohio and South Carolina. At this time, New York has very little disposal capability.

Mr. Meyer: My name is Warren Meyer, and I am representing the County Comptroller.

I have actually four questions which tie in with my concept of four main points that I think were made at one time or another during the day.

I hear, number one, that we need to determine the extent and the effect of pollution; and when I say effect, I mean the health effect, because we don't know all there is to know about it. I hear, number two, that we need, at least in some areas, to attempt to clean up existing pollution. I hear, number three, that we have to attack the causes of pollution. Number four, I hear that we need to consider one hundred percent disposal of waste. These four points generate a lot of interesting questions. In many respects we are liable to find ourselves in the area of metaphysics before we are finished, because it seems to me that if we are going to dispose one hundred percent of hazardous waste, it doesn't make any sense to talk about disposing of it in somebody else's back yard. I think there has got to be a limit to that eventually.

That raises the question of new technology. What is being done in this country and in the rest of the world toward developing new technology, not so much to dispose of these materials as to convert them into something which is usable and necessary?

Secondly, how vigorously are we going to attack the causes of pollution? We could go to the illogical extreme of putting all of the polluting industries out of business. We could even put homeowners out of business if we wanted to go to such extremes. How reversible is pollution? I remember when I started to do some research for a study that I am now doing for the Comptroller, I came across a Newsday article quoting a man, who I belive was in charge of the Department of Planning at the University of Pennsylvania, as having said that one-third of the Long Island groundwater supply was irreversibly polluted. I wrote to the gentleman and asked him on what facts he based that conclusion, and I never got a response. I address these general questions to the panel at large, whoever wants to attack them.

Mr. Lawrence: I can respond to part of it.

In response to your question concerning new technologies, it is my feeling that the technology required to deal with most industrial wastes is already available. It is not a matter of developing so much new technology; it's a matter of encouraging those companies with the resources to implement this technology into getting into the industrial waste disposal business.I can assure you that most major companies that have the financial capability to implement this new technology are quite uncertain as to what the future will bring and, therefore, are very concerned about making any substantial investments.

That comes back to my argument about the government providing incentives, in some manner, to bring these resources into the industrial waste disposal market, so that we can employ the technology that is available to us now, and can use that technology to solve the problems that we are faced with.

As far as your other questions are concerned, they are really not in my area of expertise.

Doctor Zaki: (Interposing) I would like to respond to the question of health effects. As I mentioned in my presentation, so far, unfortunately, we don't know what the health effects of most of the contaminants are. In particular, when we consider Aldicarb, the level we are enforcing is seven parts per billion. The study we conducted between May and July of 1980 cost almost one million dollars, most of it paid by Union Carbide. However, when you consider the effort and manpower which was put forth by the County, it is very easily in excess of one million dollars.

Now, for what? For a level of seven parts per billion? If you ask me, I don't know whether there are any effects or not. I don't find anything in the study, in terms of pathology and toxicology, that shows that seven parts per billion has any effect.

There was a scare in 1977, when some people ate cucumbers which contained eight thousand to ten thousand parts per billion. These people experienced only vomiting and some discomfort for forty-six hours, with no long-term effect whatsoever. At the same time, we are enforcing here a level of seven parts per billion as hazardous. One million dollars was spent to establish realistic health effects, not extrapolations from manmade experiments. I think we should establish a national level, but the problem is who is going to find it? Hardly anyone, toxicologist or pathologist, knows the extent of the occupational exposure, the long-term exposure. Nobody knows anything as to its long-term effect on the population.

Mr. Finkenberg: John Finkenberg. I am with Suffolk County.

Mr. Lawrence mentioned that sixty percent of industrial waste generators on Long Island are being serviced by members of APLR. Mr. Fleisher mentioned a study that was done with CETA workers, and I was wondering how he came up with his sixty percent figure.

You also mentioned you were using hazardous waste for fuel oil. I was wondering what kind of waste would be acceptable for fuel.

Mr. Lawrence: As far as our figure of sixty percent goes, it certainly is an estimate based on what we know, based on who the industrial generators are, and what percentage we are servicing as an Association. It certainly is an estimate and will be revised in the future when further information becomes available.

The types of hazardous wastes that can be used as an alternative fuel are, generally speaking, all those heat-bearing materials that are free of PCB's, free of halogens to a great extent, and compatible either with residual fuels or with the other feed stocks that are available. There has been experience with Brookhaven Labs, with Celite Corporation in upstate New York, and with various other industrial burning operations that indicate that this material is quite suitable as a fuel and, in fact, has certain advantages over a residual fuel, such as Number 2, 4 or 6. Generally speaking, most heat-bearing material would be

acceptable as an alternative fuel product. There is a certain amount of technology in the blending process that has to be known, but once that is available, materials can be quite easily blended together in certain proportions and used as an alternative fuel.

Mr. Mc Intyre: How much energy is being produced here on Long Island from hazardous waste?

Mr. Lawrence: Maybe twenty thousand gallons per day is being utilized. That's a considerable saving in Number 2 fuel.

Dr. Wilenitz: I think we are going to find that some familiar materials will have to be redefined as hazardous and toxic wastes. For instance, crankcase drainage is now considered a toxic waste, but it is not something that is new.

Floor: We don't really have any evidence about long-range effects or acute effects from some of these chemicals. In light of that fact, doesn't it make good sense in terms of public health to keep the permissible concentrations as low as possible until you have done substantial long-term and defensible ecological studies to show if there is an effect? If you find no effect, then you can raise the standards. Doesn't that make more sense?

Doctor Zaki: I fully agree with you. As a matter of fact, I said absolutely that we should enforce permissible levels at the lowest value. Yet, at the same time, we should be more realistic. We are in the process of testing and detecting many contaminants which have never been identified before. As a matter of fact, some of the tests are being developed right now. I mentioned Aldicarb in particular, because the level of seven parts per billion is, in my opinion, very low. In reading over reports of animal studies—and we have had four groups of volunteers who were working in a human experimental manner—this level I think was particularly low. As a matter of fact, attempts were made to push the permissible level to forty-two or even two hundred.

I have met with EPA representatives in Washington several times on the Aldicarb problem. They have asked me, "Would you like to push the permissible level from seven to seventy?" I told them, "I don't want to push it anywhere. It is your responsibility to study and re-evaluate, and come up with realistic values, because everything has a price tag on it."

Mr. Proios: Over a year ago, the Regional Director of State DEC made a statement that over fifty percent of the toxic materials generated on Long Island were being dumped. Whether that's an accurate figure or whether ten percent is more accurate, I don't know, and I don't think anybody really knows. The question is, how often do your agencies actually conduct surveillance programs without telephoning the industry beforehand? Do you really follow waste loads on a regular basis to the points where they are actually discharged wherever it may happen to be—New Jersey or Maryland—to find out how often the materials are being disposed of properly? I have seen no data on such monitoring, and I would be curious to know if it is being done on a regular basis, just to know that someone is following up to see that these materials are being handled in a proper manner.

Secondly, of all the data collected under the SPDES Permits, what percentage is being verified by the State agencies, and what percentage is supplied by the industries, themselves. Is there a regular program whereby the government goes back and takes its own samples and doesn't rely on figures solely provided by industry?

Mr. Costa: Well, as to the first part of your question, you have the problem of jurisdiction on following someone to New Jersey, and I really think that's where you have to get into the higher levels of government for enforcement in those areas. We have had occasion to follow some trucks, but only within the County. We have never done it outside of the County line.

As for the second part of your question, we currently have laboratory capacity available to us one day a week for sample analysis. We sample all of the industries permitted under SPDES, and many of the industries that have a discharge not covered by SPDES, or have a SPDES permit being processed at the State level. I can't give you a number off the top of my head, but I do know that my staff is sampling each day, and whenever we find a violation, the company gets a Notice of Violation. That leads either to legal action by the State, or to our working with the company to solve the problem. It is not done as much as we would like, but it is being done. As I said before, under current restrictions, we have lab capability only once a week. If someone chooses not to pollute on that specific day, we have a problem following up on it.

I think I brought that up before when I said we need a lot more laboratory capability. We have a pretty good capability when it comes to heavy metals, but when it comes to organics, we don't have the lab facilities. The people in the lab don't like to see our samples. They explode on them at times; they dirty their equipment. They have to dilute them sometimes fifty times before they can run them through their equipment. Furthermore, if we don't have the staff, there is practically no enforcement other than a cooperative effort. Most times, the cooperative effort does work.

Mr. Fleisher: We have about the same situation in Nassau. We did have occasion once to follow somebody. He was of questionable repute, so I sent somebody to follow him as far as the County line. As long as he kept going, that's all we could do about it. As far as checking on SPDES self-monitoring, which is where the company does the sampling and sends in their own results, we do try to get back twice a year to each company. However, I lost four weeks recently, because I had no personnel to do it. I had a CETA employee who wasn't rehired for about four weeks.

Also, our lab makes the same complaint as they do in Suffolk. When I send them an industrial waste sample that can have any one of hundreds of different compounds, it takes them much longer to do than a water sample, because they can overload their gas chromatograph, and it takes them three days to clean up the mess. If I knew what was in it, I wouldn't have had to send it to them, so I can't tell them beforehand. We need more assistance in the collection and more assistance in the lab in getting the tests done.

I don't know about Suffolk County, but Nassau County does have some undercover detectives working for the County Attorney, and the County District Attorney, who are looking for illegal dumpers. It is publicly known, at least within the industry, that they are around. We are following up, and we are not going to let anything we know of get away; but there is a limit to how many places you can be at the same time with a small staff.

Mr. Costa: On that same comment, it's suspected at least that a lot of waste is entering the scavenger plants; Babylon Town runs several such plants. At the County level, I know they sample every truck. That does not mean they analyze every truck, but they do grab a sample from

every truck. So if they have a problem on a specific day, they can isolate it and sometimes find out where the load came from. They have found loads coming from fictitious locations on occasion. We have found a lot of metals in the effluents from some of the town scavenger plants, but it is rather difficult to determine where it came from. It does require a good staff. I think the Suffolk County District Attorney has recently assigned a special investigator to look into some of these toxic problems.

Mr. Bruckman: New York State DEC has assigned two conservation officers who operate in plainclothes and unmarked cars. They are engaged in surveillance related to any type of complaint or anyone suspected of illegal dumping.

If you see an act of illegal dumping, I would suggest calling up the County Health Department immediately. If you have any problem reaching them, call up the State, 751-7900, and either the County or we will get somebody sent out immediately.

Mrs. Richard: I would like to ask a question of the Attorney General's Office and Mr. Bruckman.

Mr. Proudfit, we are spending eighty dollars a day, according to a conference I attended Saturday, to house inmates who are in prison on misdemeanors. Do you know how much a day we are spending on criminal polluters who are, perhaps, poisoning all of us?

Mr. Proudfit: I can't answer your question. I think your question is well taken. That, of course, depends on priorities, and we are not always in a position to determine our priorities. That is determined by the Legislature and, specifically, by the budget.

Mrs. Richard: Do you feel you have enough funds to handle the possible criminal polluters who may be coming to your door regardless of route?

Mr. Proudfit: I think you will see an improvement in the situation because, as one of the speakers mentioned, a new law has been passed, which gives the District Attorney authority. Most people are confused as to the amount of criminal work that the Attorney General's Office does. We are primarily a civil office. We do some criminal work, but most of the criminal enforcement is done by the District Attorney. We do have a Special Prosecutions Bureau, and our Bureau is forming a unit to do some criminal prosecutions, but it will be limited by resources.

Mrs. Richard: I guess you would have interstate and intrastate problems.

Mr. Proudfit: There is certainly an interstate problem.

Mrs. Richard: Mr. Bruckman, I would like to ask this. If the problem of finding a solution to waste disposal is such an urgent one, is it not a State responsibility to mandate a timetable immediately and to provide a financing mechanism to begin to find a solution.

Mr. Bruckman: I am very much involved in battling for more State funds for my own particular section. The Solid Waste Management Division in Region I consists of myself, an assistant engineer and a part time technician, shared with someone else. That is the entire technical staff. I recently lost an engineer who went to work in private industry. I am told he will not be replaced because he was on a Federally-funded program. The Federal funds have diminished, and the State will not provide funds of its own.

Certainly, I feel that what is needed is coordinated effort, involving a realistic appropriation of funds. I think that we have an analogy. I was in Amsterdam recently, and as we know, the Dutch have had a problem with tides. They appropriated the required money and built dams. On the other hand, there is the legendary King Canute. When the tide came rolling in, he commanded the tide to stay back. I feel that I am in the position of King Canute. There are lots of laws, but I don't have the means to do much about them.

Mrs. Richard: I see. What worries me, I guess, is that the funds are decreasing in direct ratio to the increasing problems. I find your answer very sad.

Mr. Kane: Julian Kane, Citizens Advisory Committee to the Long Island Regional Planning Board Water Management Study.

This is a question to Mr. Buckman, although I think, perhaps, Mr. Fleisher would also want to comment on it.

A comparison between the discharge standards in the DEC Regulations to Class GA Potable Waters, which includes our groundwaters, and those of the Nassau County Regulations, Ordinance 401 for Sanitary Sewers, shows that they do not, in fact, tally very closely. For instance, of about sixty synthetic organics on the DEC list, only one is on the County list. There are many other organics on the DEC list besides pesticides. There are three items on the DEC list which are not on the County list, and six items on the County lists that are not on the DEC list. One of these is radioactive substances. Of twenty-six substances in the County Regulations, the DEC Regulations are more restrictive in seven cases, and similar in seven cases. Standards for the other three substances are yet to be determined. The pH limits are 6.5 to 8.5 in the DEC Regulations, but 5.5 to 9.5 in the County Regulations.

Such items as cadmium are higher in the County regulations than in the DEC regulations. Mercury is twenty percent higher in the County standards than in the DEC standards. Although the Nassau regulations are primarily to protect the sewer treatment plants and to set standards for effluent discharge to marine waters, a comparison with DEC Regulations for effluent discharge to potable waters is in order because of the high estimated rate of sewer pipe leakage in Nassau. It has been estimated that there is as much as a ten percent leakage rate from Nassau sewer pipes into the groundwater. Should there not be closer coordination between the sewer discharge standards and the State standards, since leakage can get into Class GA groundwaters?

Mr. Fleisher: You actually answered part of the question yourself when you said that one is to protect the sewer system and one to protect the environment. It is one thing to protect the organisms in a sewage treatment plant, but bear in mind that a waste water treatment plant is not allowed to discharge effluent into the groundwater until it reduces all contaminants to at least the levels of the groundwater discharge standards.

Obviously, you have to increase surveillance on industries dumping into the sewers, because it is a lot cheaper to keep contaminants out than it is to remove them at the other end. As for Part 703, the DEC's discharge standards, most of the DEC's standards are for pesticides which have little to do with substances being dumped in the sewers. We don't have any industries manufacturing pesticides.

The sewer ordinance is also concerned with items like benzene because of the possibility of corroding pipe fittings, and the danger of explosions.

Connection to a sewer does not solve an industry's problem. A manufacturer might think that he has the County Health Department off his back now that he is

going over to the sewers. You are not getting rid of contaminants; you are simply putting them into sewers, and you still have to treat to meet standards. If we find that for some reason the sewer standards aren't stringent enough, I am sure we will change them. Now we are going to advanced waste water treatment, and one of our problems is not being able to dispose of the resulting sludge if it has too much heavy metals. It is best to keep the heavy metals out so that the sludge is acceptable at the other end. Unless we do that, we are never going to get rid of sewage. Just to treat sewage to make sludge and then dump it back into the ocean isn't going to help us very much. We want to make it into usable products, and the only way to do that is to keep out the heavy metals.

Mr. Kane: What about the leakage into the groundwaters?

Mr. Fleisher: There is a certain amount of leakage allowable in all sewage systems. I don't think it is ten percent. It is something like a thousand gallons per day per each mile of sewer. It is impossible to make a pipe that doesn't leak, and that's all there is to it. We are not encouraging anybody to pump industrial wastes into a sewer unless they meet a standard. If the standard isn't high enough, I am sure we can do something about changing it.

Mr. Tramel: My name is Richard Tramel. I teach political science in Suffolk Community College; and to state the obvious, this is a very, very serious and complex problem. We have heard people speak about overlapping government agencies, overlapping jurisdictions, what the various rules, regulations, et cetera are. We discussed this in our classes and young people in America are very, very concerned about what our generation, if I may use that term somewhat loosely, is going to leave to them.

I am wondering, and this is more than merely a rhetorical question, I am wondering whether it is possible to eliminate these problems unless we let a very strong government handle these matters on a nationwide basis.

Dr. Wilenitz: Does anyone want to pick up that hot potato?

Mr. Bruckman: This actually is out of my sphere since it deals with other government agencies. As I understand the intent of the EPA, they wish to set broad basic guidelines and then delegate powers to the states. Then, of course, we have a question as to how much you believe in local government as opposed to federal government.

On manifest systems, for instance, I understand that eleven states have met and are drawing up a regional manifest system. It might be better if the EPA were to draw up one document for the entire fifty states. It is a question of how to organize things. The Federal Government is going to dictate certain minimum standards. In the past, New York State has generally imposed still stricter standards. For instance, our groundwater standards are much more extensive and much stricter than Federal standards. I don't know how it is in other states, and, as a matter of fact, it varies in different parts of our state; but on Long Island we work very closely with the County Health Departments. They get State aid from us, and they act as our agent, in addition to enforcing some of their own regulations.

I must say, though, I don't think complete Federal control and regulation is desirable for several reasons. There are regional differences. We here on Long Island, for instance, rely on a sole source aquifer; we drink whatever goes into the ground. I understand the same situation exists in southern Florida. It does not occur in most of the rest of the country. Consequently, we have a special environmental problem. There may be reasons specific to a county where it may feel that it wants a regulation of its own. For example, Suffolk County has a special ban on certain detergents and now has regulations regarding the underground storage of certain materials. Is it desirable for the Federal government to establish regulations that would apply throughout the country, when different parts of the country may have unique problems?

Dr. Wilenitz: Any questions?

Mrs. Lundegaard: I would like to ask Morris Bruckman a question.

In 1978 Long Island was divided into hydrogeologic zones, each having an important designation with respect to discharge. The DEC, in June 1979, discovered resource recovery as a way to handle solid waste on Long Island. The following November, the Multi-Town Authority purchased a parcel of land for its three-thousand-four-hundred ton per day incinerator. Even though this piece of land is located in the 208 Zone One Primary Recharge Area, there was no assessment by the Office of General Services as to the impact a waste facility would have here.

With this in mind, I would like to know if the State and the DEC, in particular, places any value on coordinating the findings of the 208 with its own environmental recommendations?

Mr. Bruckman: The policy of June 1979 that you enunciated was the landfill policy. Multi-Town plans to put an incinerator in a sensitive area. We have no restriction as to where an incinerator may go. An incinerator is not a landfill. The amount of garbage stored is very much less. At the present time, there has been no statement by Multi-Town as to where it would put residue, as to where it would landfill. When a decision is made by Multi-Town, it will be reviewed. But the June 1979 policy has not been changed in any way.

Dr. Wilenitz: Yes?

Mrs. Bradley: Letitia Bradley.

It is not clear to me whether or not you feel it is appropriate to have some kind of regional hazardous waste treatment facility. It seems to me, even in the best of circumstances, with industry trying to cut down the generation of various undesirable wastes and so forth, that we are still left with a certain amount of stuff that has to go someplace, or somebody needs to do something with it. I don't think it's right to ship it to Arkansas because their requirements are not as high as ours. We are special on Long Island, but it also seems to me that we have a responsibility to take care of our own waste.

I would like the various authorities to discuss that question, please.

Mr. Bruckman: We have a severe problem. I have had occasion to consider various types of solid waste facilities in various parts of the Island. Whenever I do, there is invariably local opposition even to some facilities that I feel may be relatively innocuous. As regards disposal facilities here on Long Island, our original policy, which I think is a wise one, recognizes the fact that this is a sole source aquifer. We have restrictions on landfilling that do not apply elsewhere in New York State. There are possibilities of certain technologies. For instance, I could see having an incinerator here on Long Island, a resource recovery system that would burn the hazardous waste, subject of course to the approval of our air quality people. It may or may not leave a residue that is hazardous. So, I would say that that particular type of facility would be in line with our current policies.

When it comes to the question of landfilling, our policy would really prevent any landfilling of hazardous waste. Someone here mentioned a possibility of advanced technology. There are some procedures for burning at least ordinary garbage to produce a glasslike material that would be insoluble. If hazardous waste would remain insoluble, it would no longer be a hazardous waste; but that, I think, is pretty far in the future.

To the extent that industry has to ship vast distances, this burden may be intolerable. I think our number one consideration is protection of our groundwater, and if a way can be devised to have a hazardous waste facility and to protect our groundwater, then certainly we very definitely should consider that.

Dr. Wilenitz: Any other questions?

Ms. Paidoussis: Olga Paidoussis from Chem Tech Consultants.

I would like to know if the State is considering any superfund legislation to pay for spills, or grants-in-aid for remedying contaminated wells? Is the taxpayer now assuming most of the burden of cleanup, or who is assuming most of the burden?

Mr. Proudfit: I really can't answer. For the moment, we are going to rely on Federal funds, but there is, obviously, going to have to be additional funding, and I can't tell you where that is going to come from. It is going to come from the taxpayer ultimately anyway, however it is done.

Ms. Paidoussis: I mean, is the private citizen paying for most of it now, or is industry going to be required to pay the larger percentage?

Mr. Proudfit: We are taking the approach, for instance with Love Canal, which will establish a precedent as far as the expense of cleanup goes, that it will be industry. There are landfills that have been closed down, some for many years. We have a statute of limitations, possibly lots of legal problems. Even if we could identify the industry that had disposed of its wastes in that landfill, it may be out of business. The resources will have to be found somewhere. If we want to find those resources and we want to take care of the problem, then we have to treat that as a priority. That's something that, ultimately, the legislators will have to decide.

Mr. Fleisher: One point on that. The U.S. House of Representatives is considering legislation for hazardous waste funding. Half of the money is to come from a tax on industry, so much per pound of inorganic chemicals, so much per pound of petroleum feed stock. The only thing exempted was imported oil. I don't know if it will pass the Senate. The funding level considered is one hundred million the first year, one hundred million the second year, and two hundred million the fourth year.

As far as the State Government goes, every year the Legislature asks the Counties what additional laws they would like to see in the State. Every year, Nassau County has asked for a cleanup fund for waste disposal, as there is for oil cleanup. We are always making requests but so far we haven't seen any results.

Ms. Paidoussis: Would that also include cleanup of public wells that have been closed due to high concentrations of toxics?

Mr. Fleisher: So far, the ony thing I have seen addressed in the Bill was the cleanup of the site, itself. The one from the Feds is written pretty much like the Navigation Bill of New York State. If you can't get an owner to clean it up immediately, you go in there anyway and clean it up. Then you sue him for the cost. The owner may be bankrupt, or there may be an emergency and you can't wait for legal action. The Bill only addresses inactive hazardous waste sites. It doesn't address navigable waterways, and I doubt if it has anything to do with the cleanup of the water, itself. That certainly should be considered because, obviously, the people in Bethpage shouldn't have to pay for the spill of the industry that's down there, and the people in East Meadow shouldn't have to pay for the cleanup of the petroleum product. They didn't cause it, so why should they pay for it?

Funds are very important, and they should include the cleanup of the source.

Dr. Wilenitz: I have a definite impression that we are all getting very tired. So, we will entertain one more question, and then I think we will call it a day.

Mr. White: Michael White, Town of Huntington.

We heard Mr. Lawrence, in Nassau, speak about industry that's generating a great amount of toxic waste. I think they have addressed some of the problems, but there is something else which, however, may be minor.

We have an industry that clearly has to take on the economic burden of waste disposal. We also have households that are potential generators of small volumes of waste. At the Town level, we have people calling us saying they have collected flashlight batteries or old paint cans and solvents, or moved to a house and found ten pounds of old pesticides in the basement. These people can't get rid of the stuff, and we don't want them getting rid of it in a landfill. We can tell them to call a contractor; but to the householder, it doesn't really make economic sense to call up one of these firms. Maybe we should have some type of agency or governmental program to remove this stuff out of the environment and keep it out of the landfill.

Mr. De Costanza: Anthony De Costanza: New York State Department of Environmental Conservation.

People have called the State, and we have been turning it over to three or four scavengers.

Dr. Wilenitz: Do you send somebody to pick up the stuff?

Mr. De Costanza: We have had to rely on the householder bringing it to them, or in some cases, my bringing it to them myself. We are trying to set up a place to which people can bring these materials, and have the collectors pick it up en masse, but that only started Friday.

Mr. Lawrence: Concerning residents and the various types of waste that they may have around their homes, one of our members once tried to provide an open house at which he would accept all of that type of material at no charge. Let me tell you some of the problems this member ran into. First of all, we spoke to a reporter from Newsday in an attempt to publicize our open house. Unfortunately Newsday didn't consider it important enough to run any sort of an article to make the public aware of it. Second, there is a requirement that one must have a permit to transport this type of material, and we requested Mrs. Scherb, of the DEC, to give us an exemption on this particular day. Unfortunately, we were unable to get any sort of official position from Mrs. Scherb or any publicity with respect to our open house. Consequently, nobody was aware of it and no one was able to take advantage of it.

We hope that, if we were to do something like this again, it would receive the appropriate publicity and the DEC would give the appropriate exemption so that these homeowners could bring us the pesticides from their garages, the old laquer thinners that they might have around,

and whatever else, and have it disposed of properly. We hope that, in the future, we will get more cooperation from both the government and the newspapers in bringing this to the people so they can take advantage of it.

Dr. Wilenitz: I couldn't possibly begin to summarize everything that was said today regarding all the facts and opinions thrown at us. A few things are abundantly clear, though. That is, there are very, very few specific answers to specific questions. We seem to be in a state of chaos, and before I appear to contribute to the general low spirits, I think we have to recognize that we have a political system and a judicial system that can only operate in this way. I don't mean to say that they solicit chaos, but there is a certain step that has to take place after the promulgation of legislation or regulations. These are never promulgated in enough detail to satisfy or answer every question. Consequently, there has to be years, maybe decades, during which every individual case gets thoroughly reviewed technically and legally. Eventually, we build up a body of precedents and solve our future problems by relying on those precedents.

We also have some very significant problems apart from that. One of the things that seems very evident from everybody's comments is the fact that it is not always possible to find the individual agency responsible in any given situation. There is such a multiplicity of regulations, and so many agencies involved, that at first glance, you may feel that everything has been covered, but when you get down to cases you find something had been missed. On the one hand, you may have government regulations with overlapping requirements, for instance, as was Mr. Lawrence's experience; and on the other hand, you find things that are not covered in the regulations.

A primary problem that is expressed time after time is where is the money going to come from? The generating industries are subjected to considerable economic burden which, as any rational person must agree, should be part of the working cost of doing business in the field. On the other hand, as Morris Bruckman pointed out, you have regional differences across the country, and a fellow in one area, perhaps like on Long Island with a particular aquifer problem, may have a hell of an expense in disposing of his waste, where a direct competitor somewhere else in the country may be sitting on five thousand acres of solid granite, and doesn't have that problem.

Another question, of course, is the availability of funds for regulation. How many times have the fellows at this table here remarked that they are going to do something once a week, if once a week somebody indeed makes something available to them? I think everybody agrees the problems are enormous, but unfortunately, as I said before, we have a system in this country, in which the problems get stated first of all, and then we have to work ourselves through to the solution. A case in point is the whole question of treatment facilities. As Mr. Lawrence properly pointed out, through the method of licensing, an individual landfill has to have a whole cell filled before another cell can be licensed.

What are we going to do about high treatment costs? You heard me read this morning the Environmental Facilities Corporation remarks about the studies they carried out. You may recall the sarcastic remarks by Mr. Lawrence commenting on this. It may be very insufficient information, but it is the only information we have. Now we have to decide how many facilities we need and who should own them. As came up on the recommendations, the State will own them and they will be located on State-owned land. We will get industry in to do the design, construction, maintenance and operation. Well, where is there enough State-owned land on Long Island where we can put one of these and not run into a terrible "not in my back yard" problem? This is not a factor involving only toxic waste treatment plants. We have a big problem which we continually refer to: the location of landfills. We have to protect our aquifers on Long Island. We have to dispose of our garbage on Long Island.

As somebody pointed out—the gentleman from the Comptroller's Office—one solution is to drive all the contaminating industries out of Long Island. We don't want to do that. So, the question is what are we going to do about it, and there are no answers. It would be very, very neat and proper to have a regional facility. Everybody seems to think that would be nice. Certainly, in view of the fact that, whatever we do, we have to go through New York City to do it, it would seem to be to our advantage to keep all our waste here. But where are we going to locate it? How secure can the facility be made? Can we say we will put it on a five foot thick piece of concrete, cover two hundred acres, and that will surely keep it from contaminating the environment?

I may be stretching the point a bit, but maybe that's what we have to do. Maybe sometime we will have answers, but I sure didn't hear them today, and I am not criticizing the participating speakers. This is simply the state of the situation. We have big problems, serious problems, in terms of public health and in terms of quality of life. The Federal Government and the State Legislature have defined some of these problems. That's about what they have done—define the problems. Now we have to wrestle and struggle and find out how we can solve these problems and how we can pay for them.

Before I close, there are some people I would like to thank. First of all, I would like to thank the speakers, who have given us their all in this dangerous trade. I don't see too many bloodstains.

I would also like to thank Doctor Harris, who is the Health Commissioner of Suffolk County, because it is through his kind auspices that we have this nice room free. I would also like to thank an absent friend, Jim Pim, together with our friend over there, Anthony De Costanza, who helped us put this program together. I don't know whether you found anything interesting here, but clearly the problem hasn't been solved.